

FIG. 1

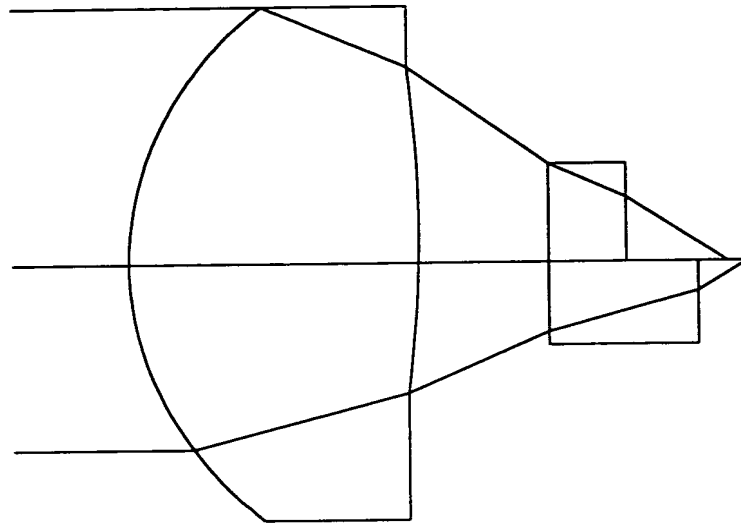


FIG. 2

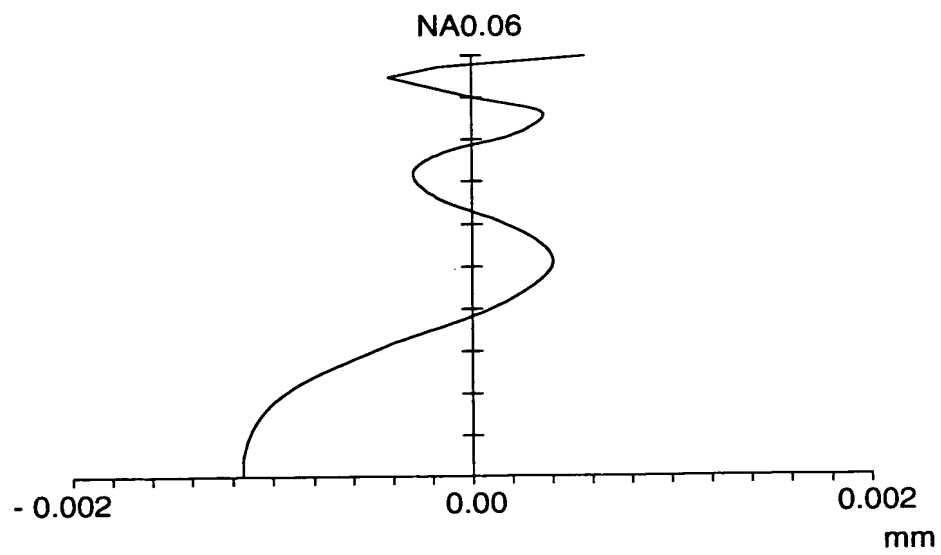


FIG. 3

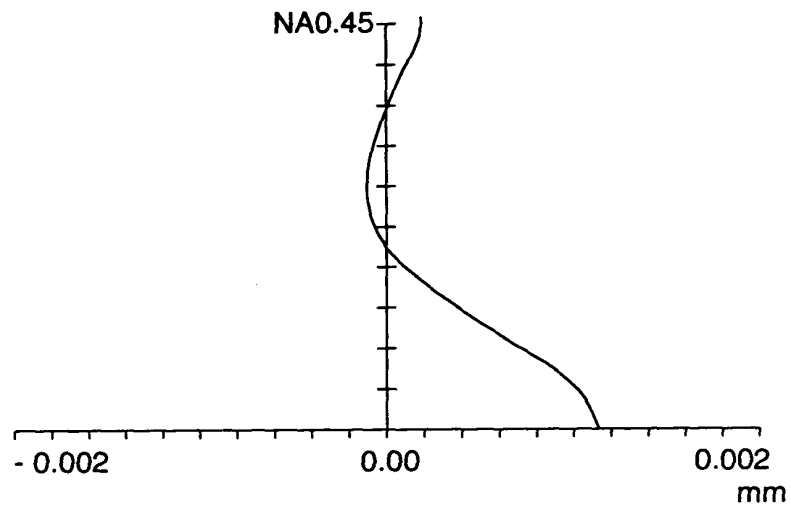


FIG. 4

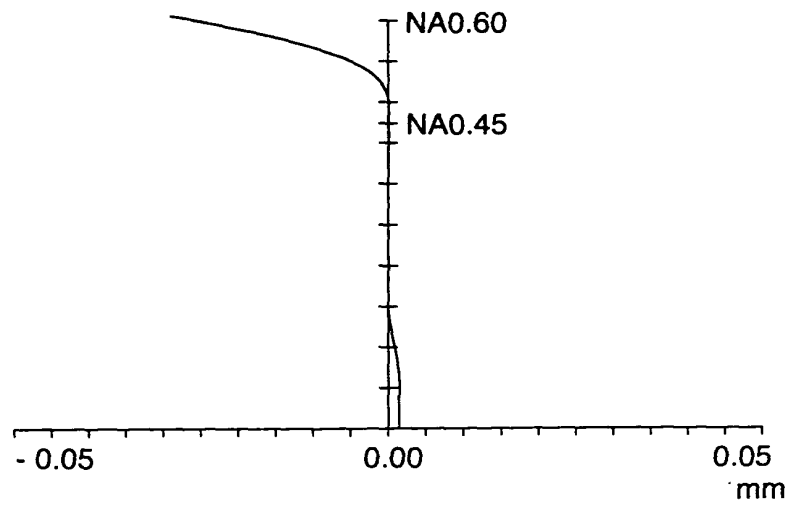


FIG. 5

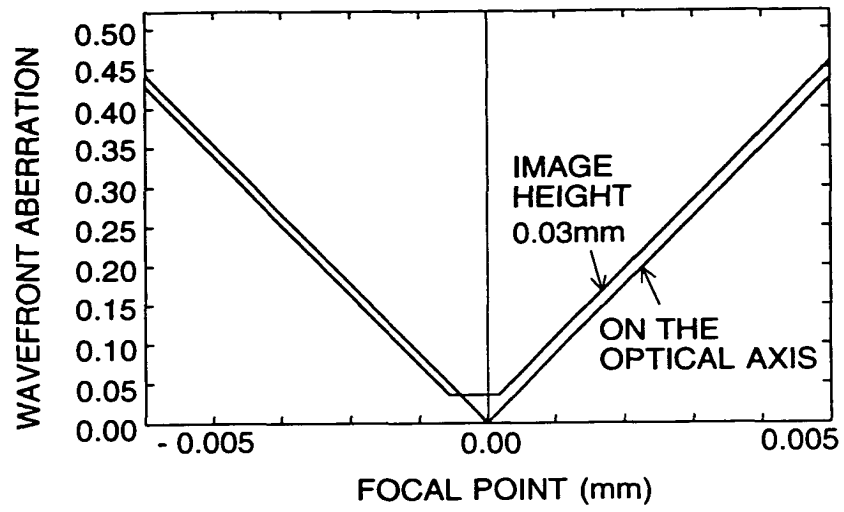


FIG. 6

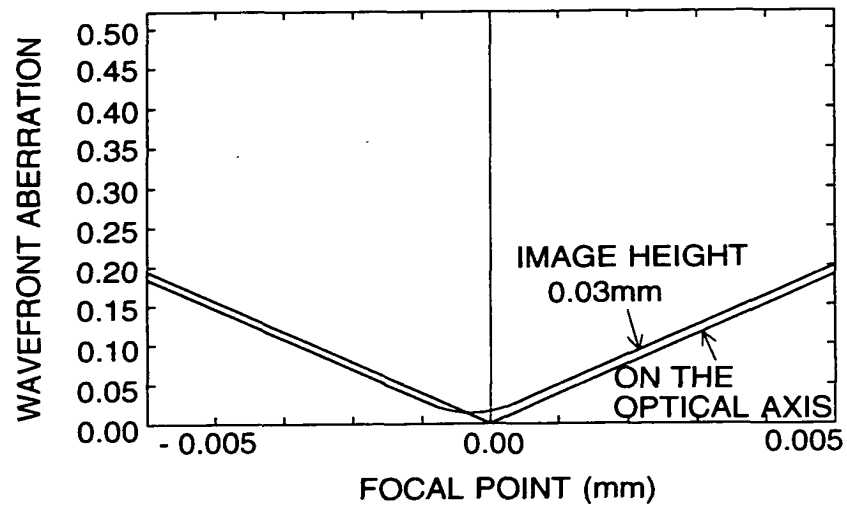


FIG. 7

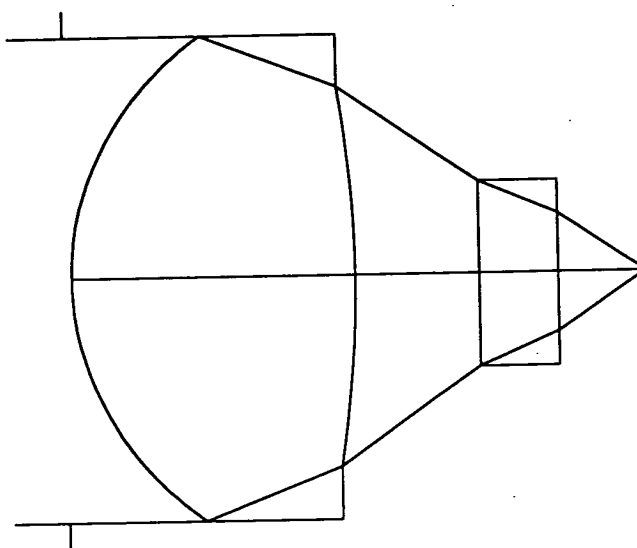


FIG. 8

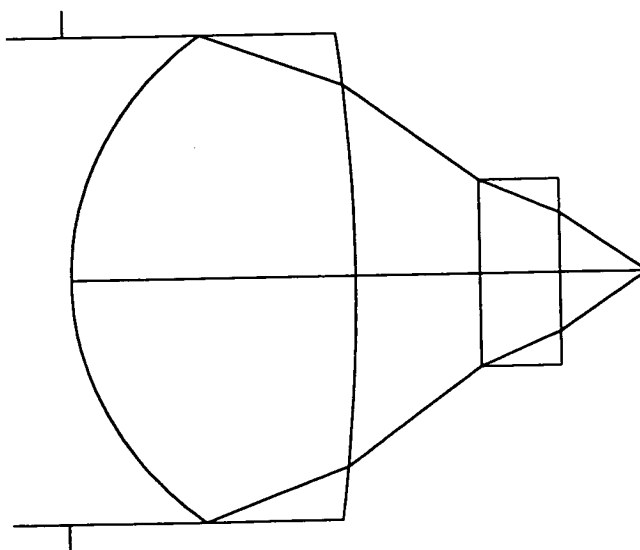


FIG. 9

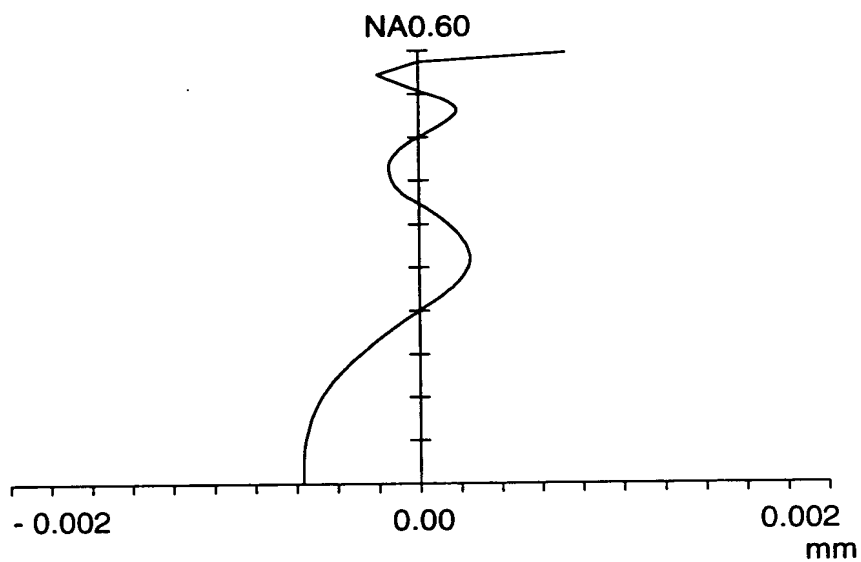


FIG. 10

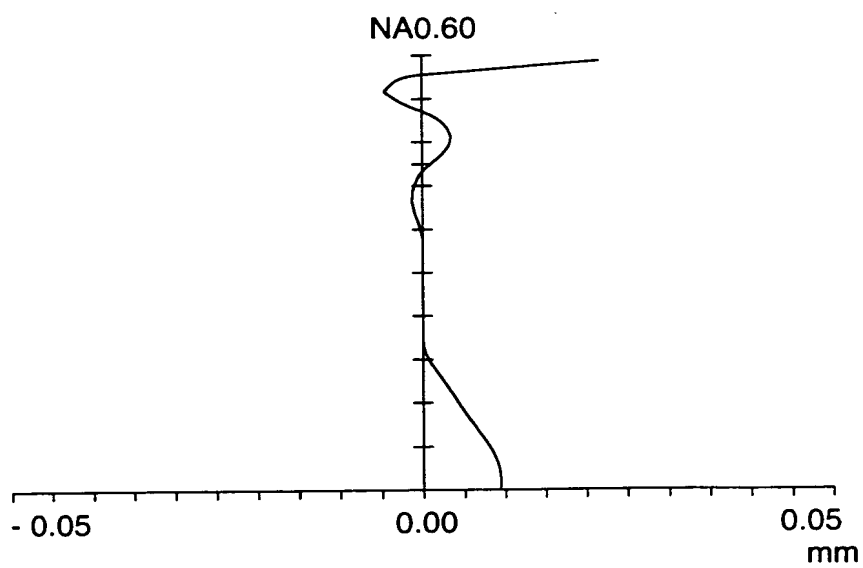


FIG. 11

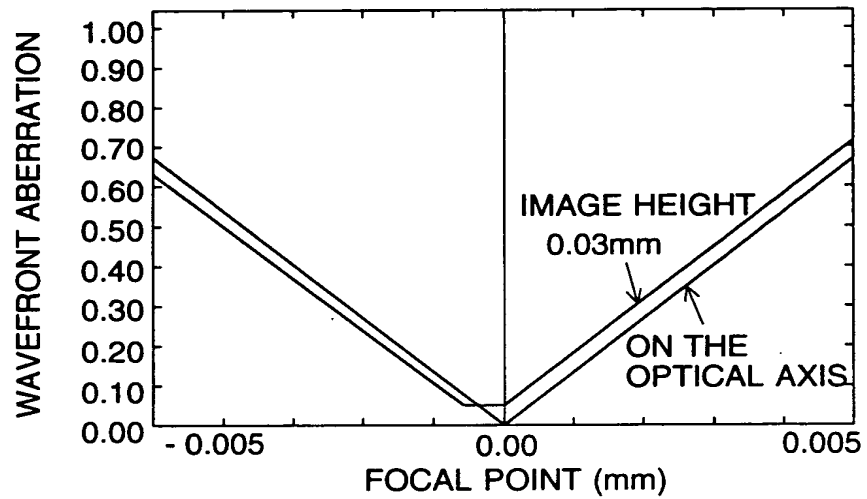


FIG. 12

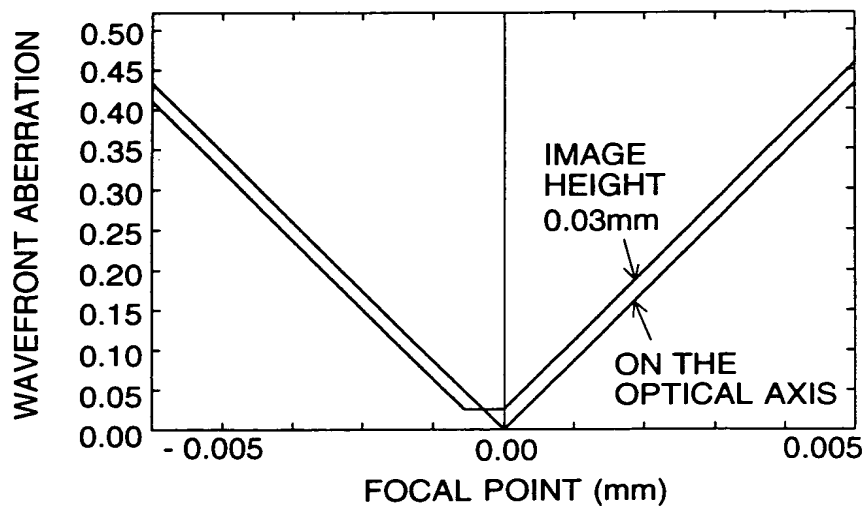


FIG. 13

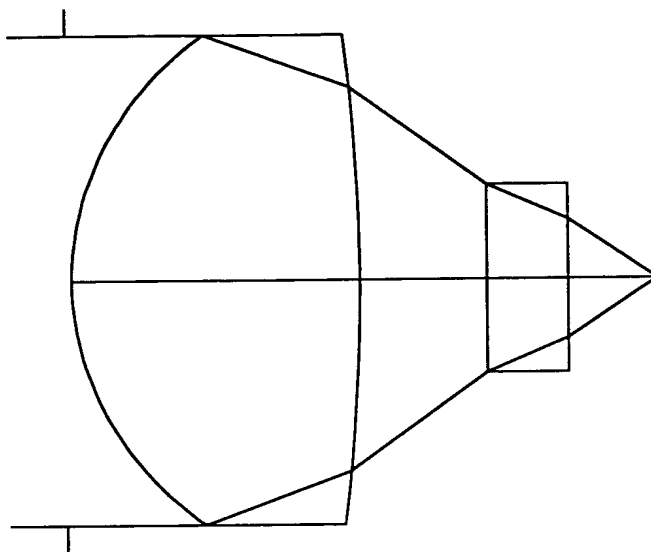


FIG. 14

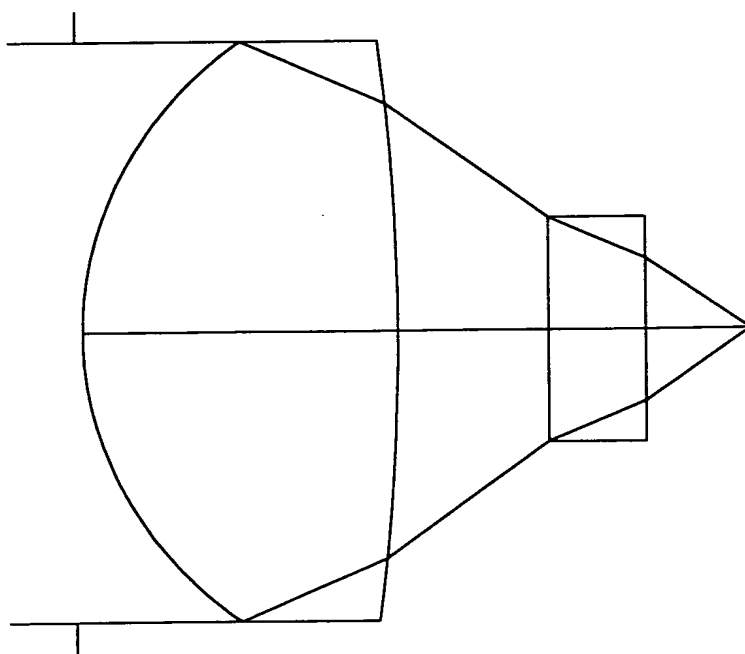


FIG. 15

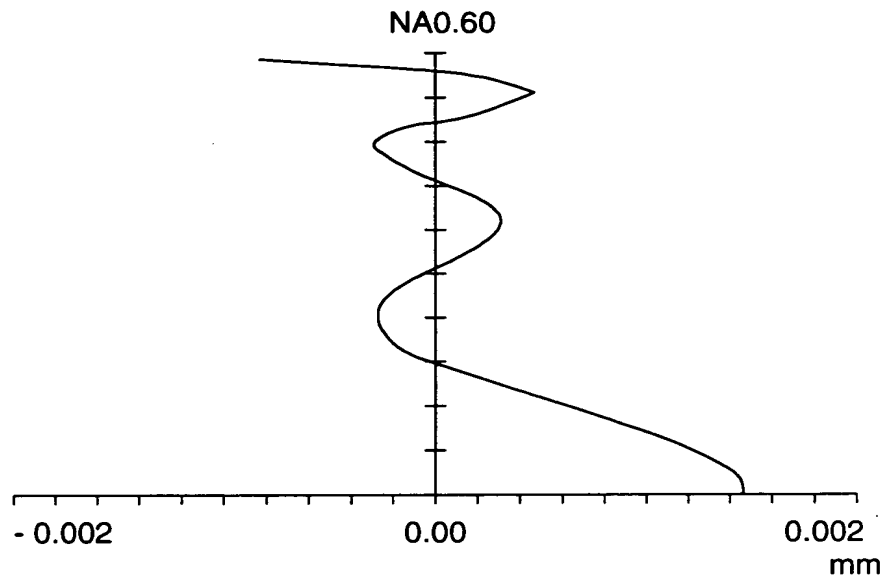


FIG. 16

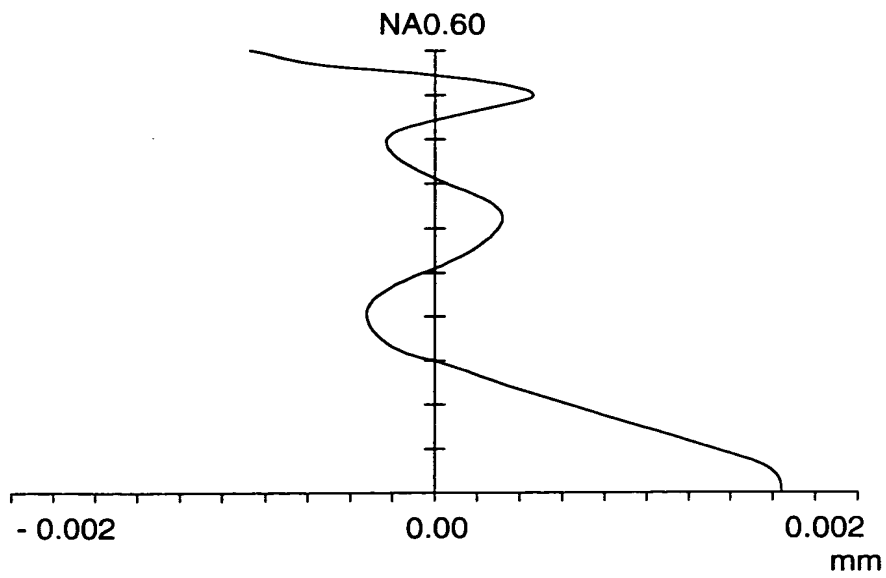


FIG. 17

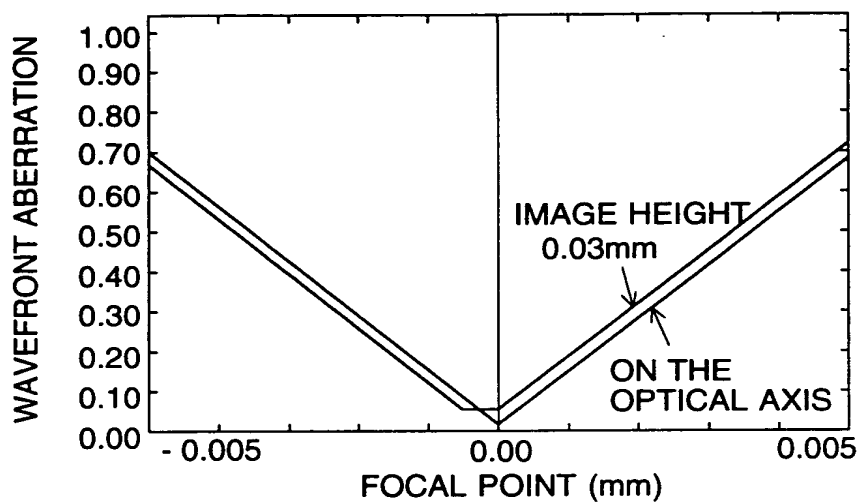


FIG. 18

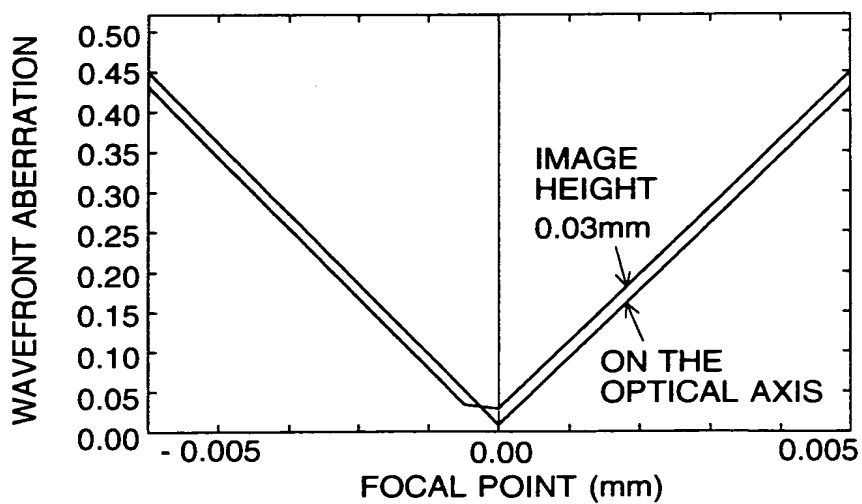


FIG. 19

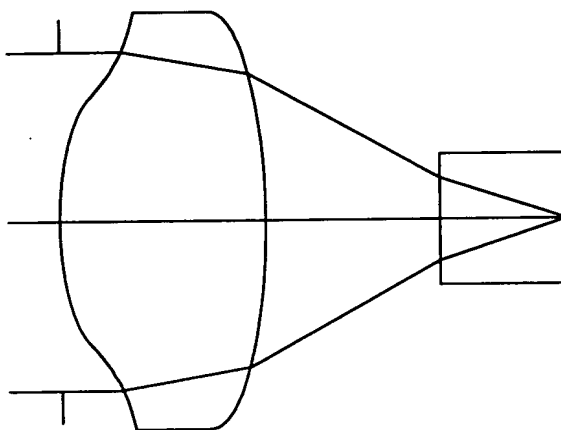


FIG. 20

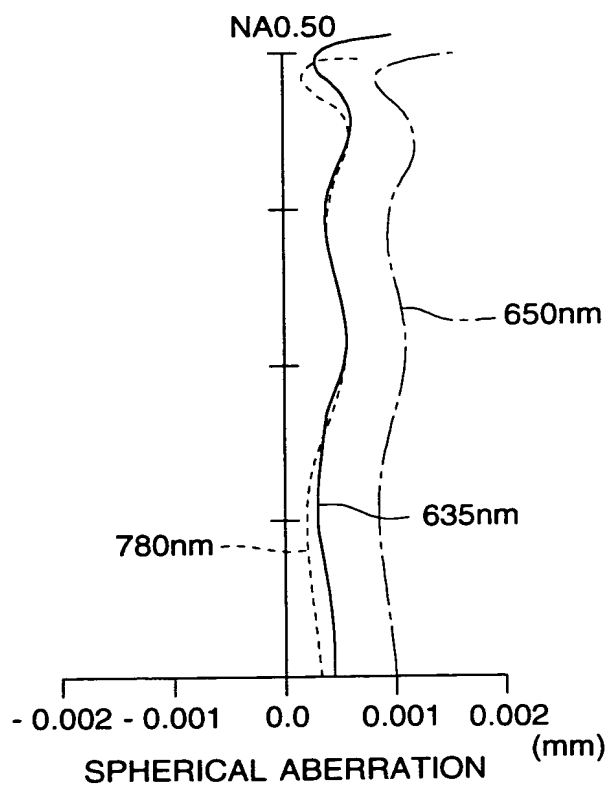


FIG. 21

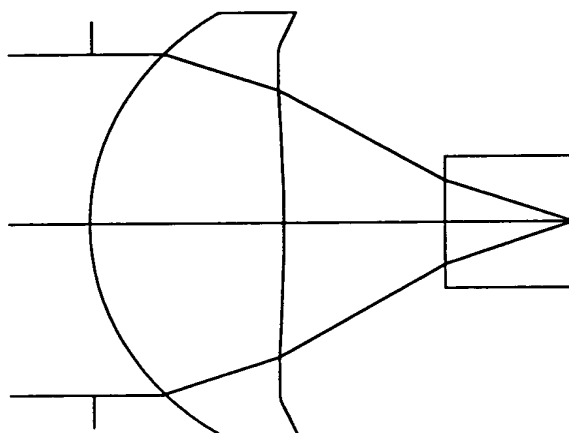


FIG. 22

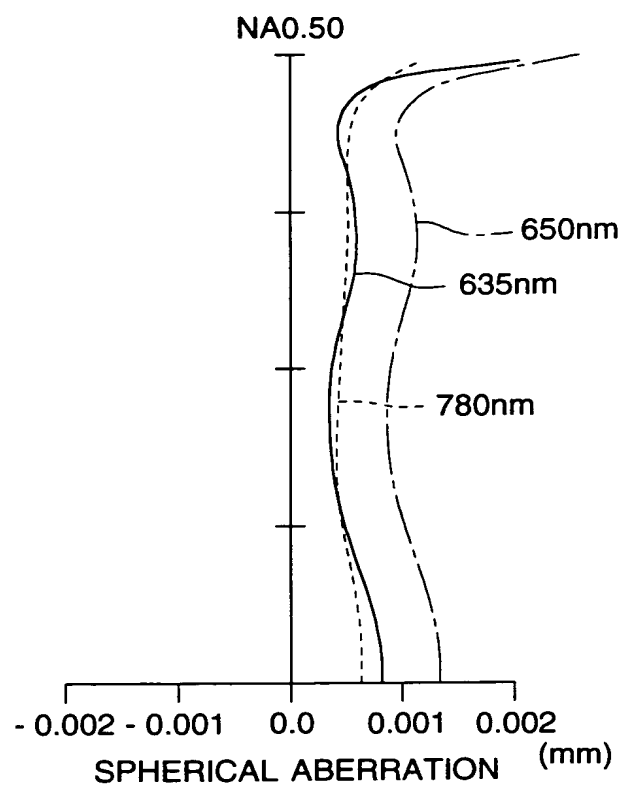


FIG. 23

CROSS SECTIONAL VIEW OF EXAMPLE 6 AND ILLUSTRATION
SHOWING OPTICAL PATH FOR WAVELENGTH $\lambda = 650\text{nm}$

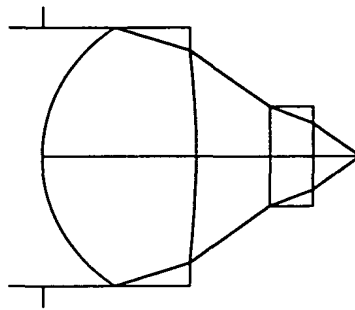


FIG. 24

CROSS SECTIONAL VIEW OF EXAMPLE 6 AND ILLUSTRATION
SHOWING OPTICAL PATH FOR WAVELENGTH $\lambda = 780\text{nm}$ (NA0.5)

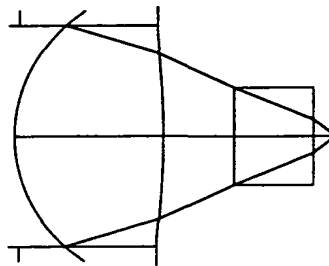


FIG. 25

DIAGRAM SHOWING SPHERICAL ABERRATION
FOR WAVELENGTH $\lambda = 650 \pm 10 \text{nm}$ IN EXAMPLE 6

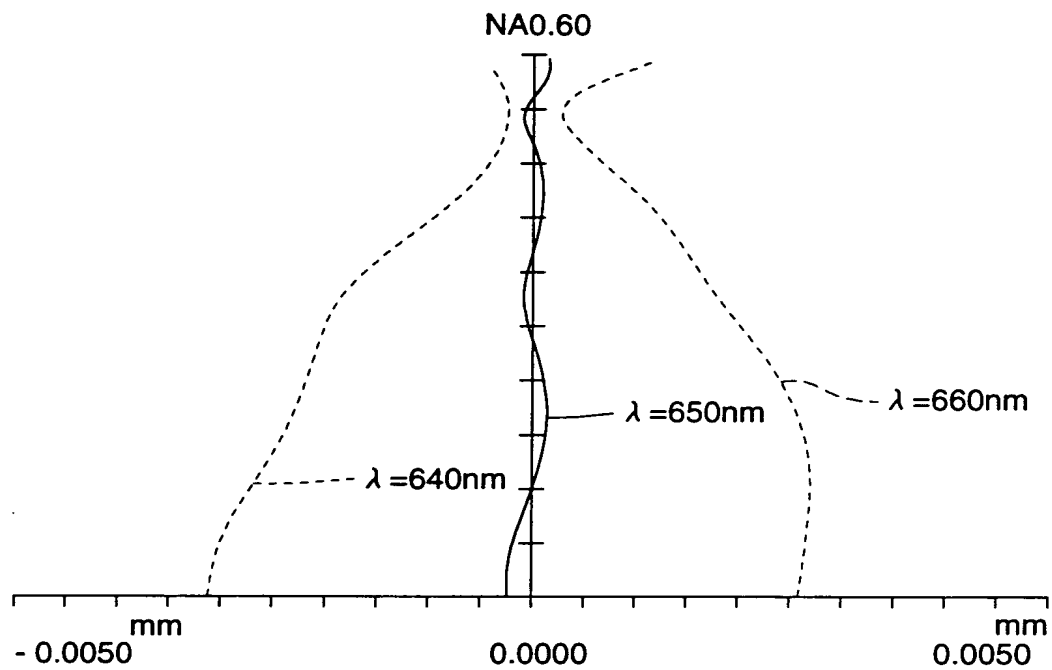


FIG. 26

DIAGRAM SHOWING SPHERICAL ABERRATION (NA0.5)
FOR WAVELENGTH $\lambda = 780 \pm 10 \text{nm}$ IN EXAMPLE 6

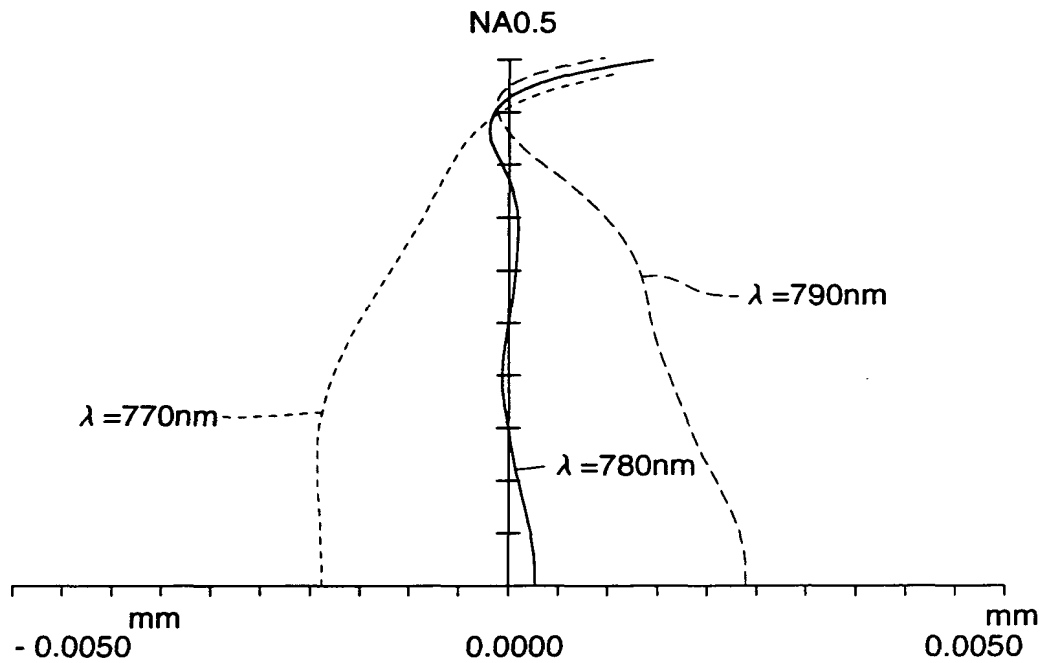


FIG. 27

DIAGRAM SHOWING SPHERICAL ABERRATION
FOR WAVELENGTH $\lambda = 780\text{nm}$ IN EXAMPLE 6

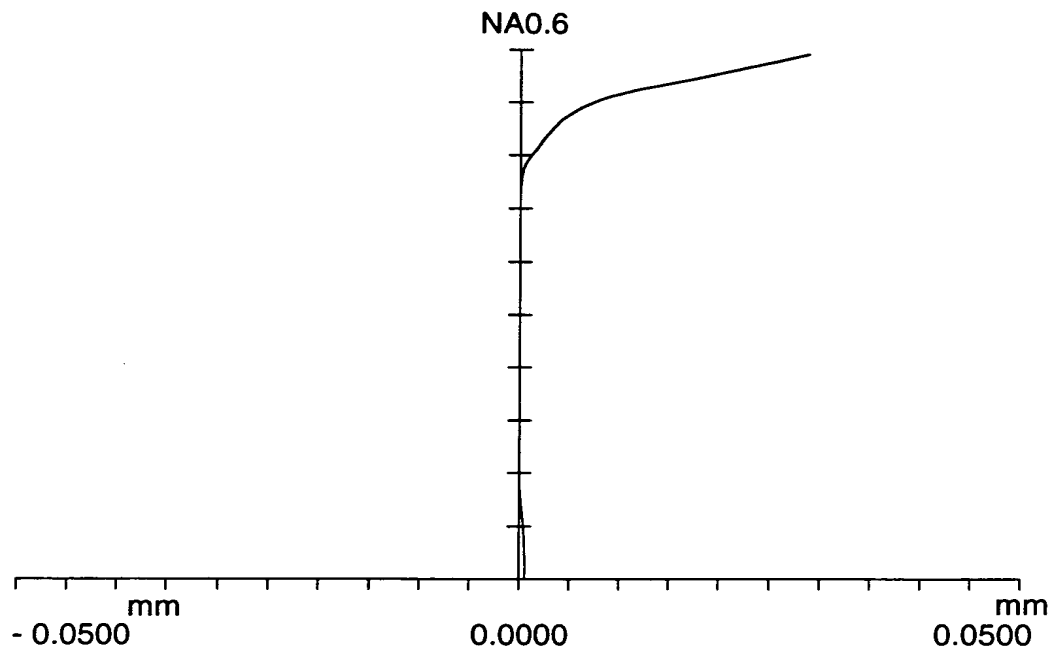


FIG. 28

DIAGRAM SHOWING WAVEFRONT ABERRATION RMS
FOR WAVELENGTH $\lambda = 650\text{nm}$ IN EXAMPLE 6

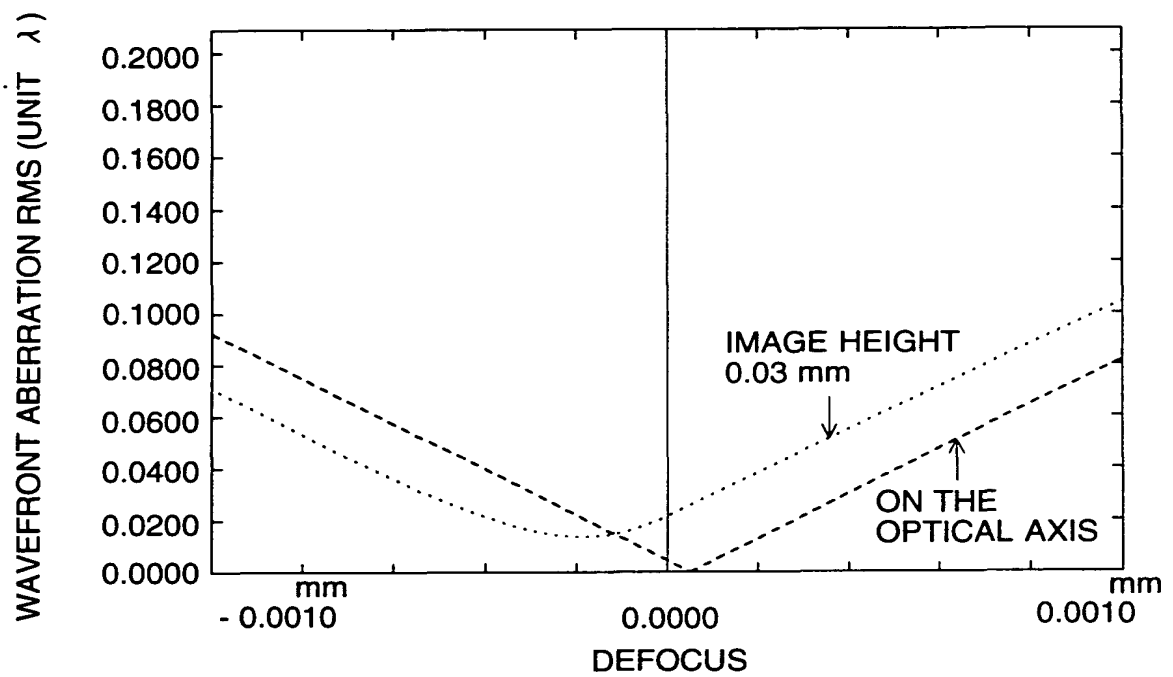


FIG. 29

DIAGRAM SHOWING WAVEFRONT ABERRATION RMS
 FOR WAVELENGTH $\lambda = 780\text{nm}$ (NA0.5) IN EXAMPLE 6

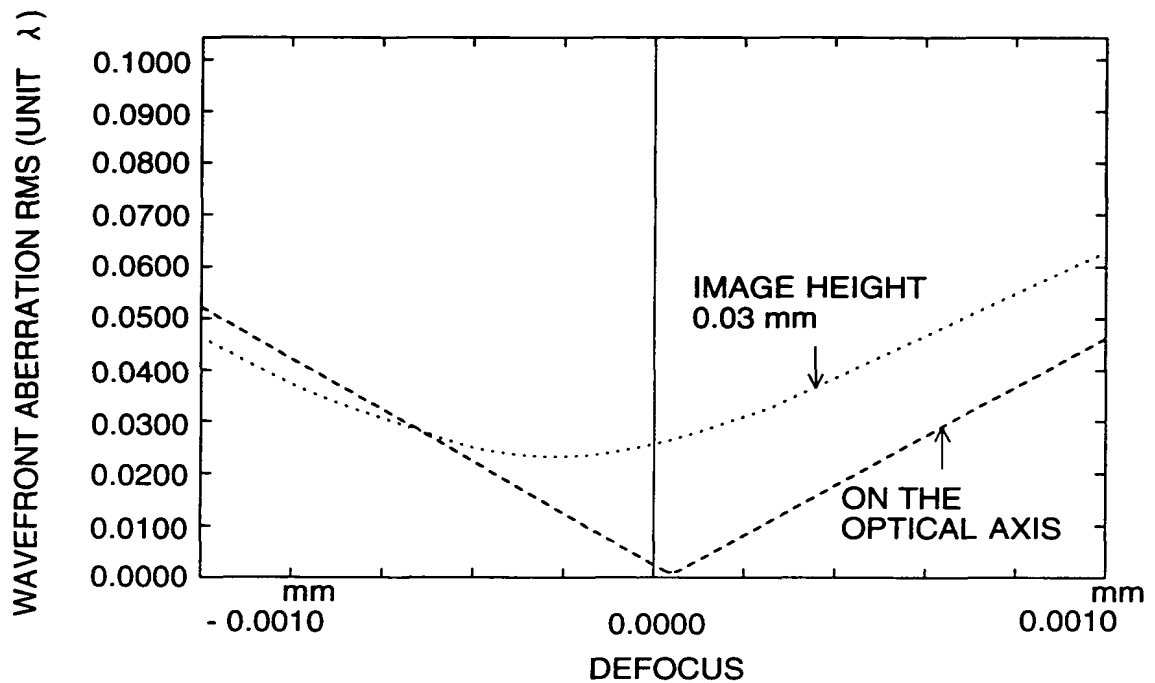


FIG. 30

CROSS SECTIONAL VIEW OF EXAMPLE 7 AND ILLUSTRATION
 SHOWING OPTICAL PATH FOR WAVELENGTH $\lambda = 650\text{nm}$

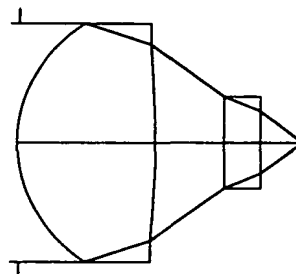


FIG. 31

CROSS SECTIONAL VIEW OF EXAMPLE 7 AND ILLUSTRATION
SHOWING OPTICAL PATH FOR WAVELENGTH $\lambda = 780\text{nm}$ (NA0.5)

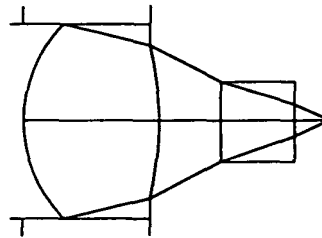


FIG. 32

DIAGRAM SHOWING SPHERICAL ABERRATION
FOR WAVELENGTH $\lambda = 650 \pm 10\text{nm}$ IN EXAMPLE 7

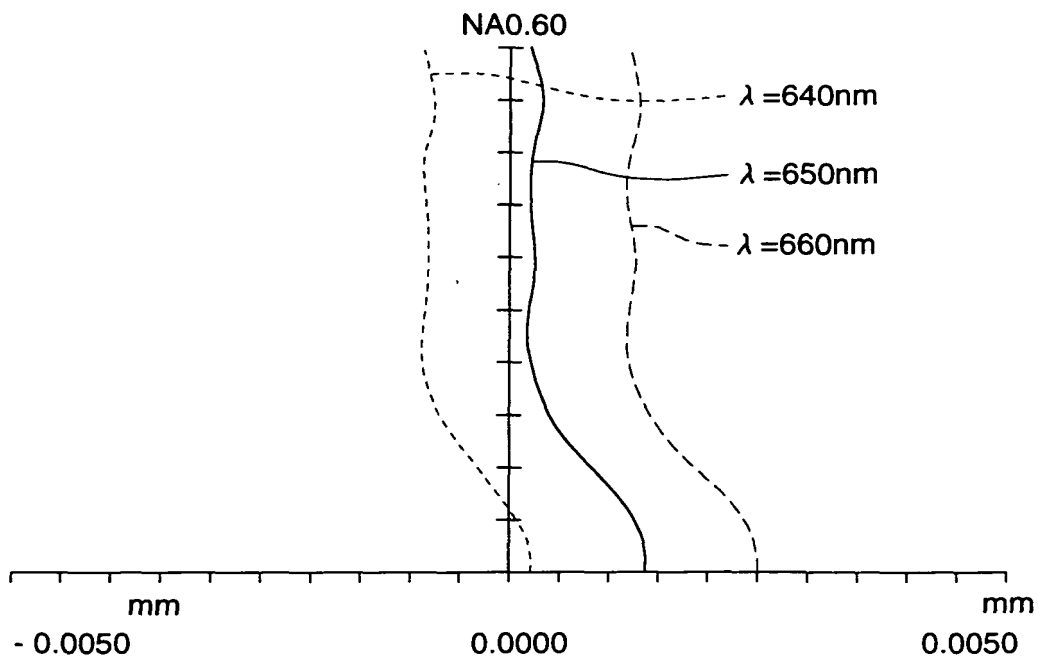


FIG. 33

DIAGRAM SHOWING SPHERICAL ABERRATION (NA0.50)
FOR WAVELENGTH $\lambda = 780 \pm 10\text{nm}$ IN EXAMPLE 7

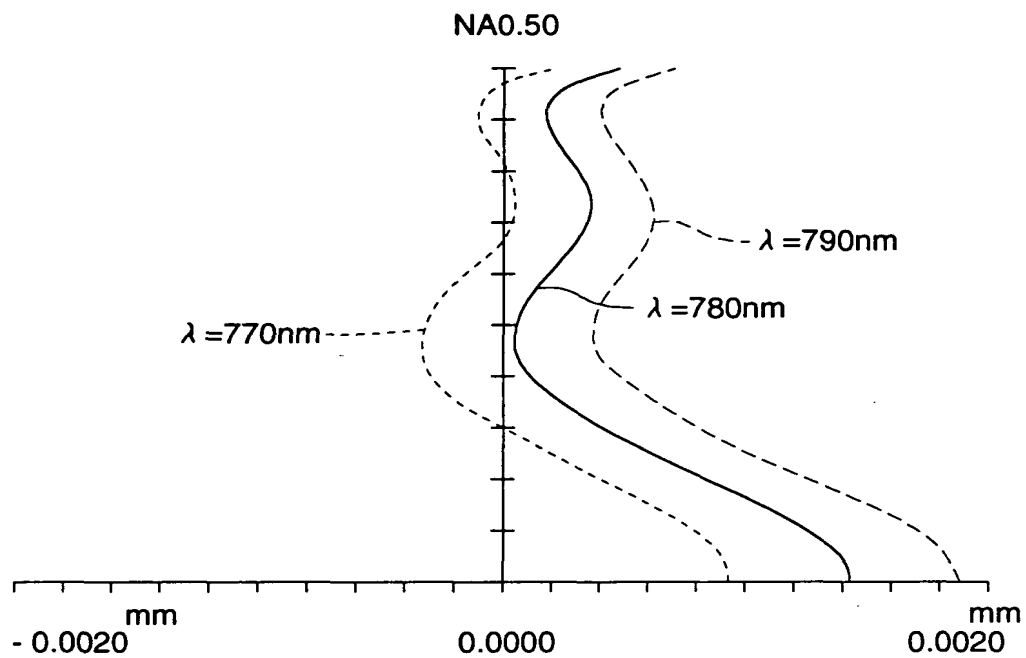


FIG. 34

DIAGRAM SHOWING SPHERICAL ABERRATION
FOR WAVELENGTH $\lambda = 780\text{nm}$ (NA0.60) IN EXAMPLE 7

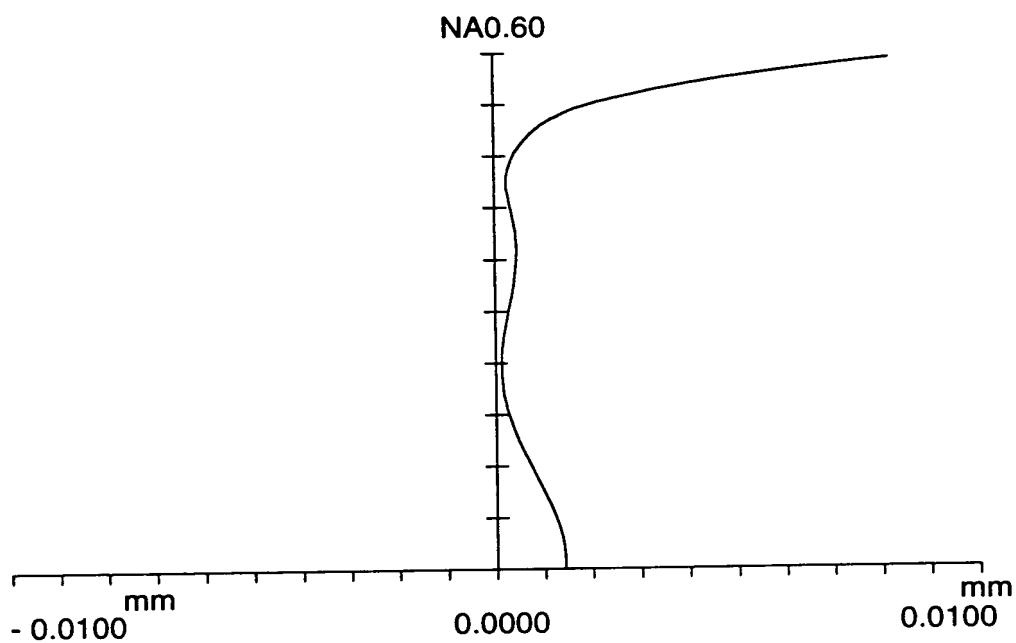


FIG. 35

DIAGRAM SHOWING WAVEFRONT ABERRATION RMS
FOR WAVELENGTH $\lambda = 650\text{nm}$ IN EXAMPLE 7

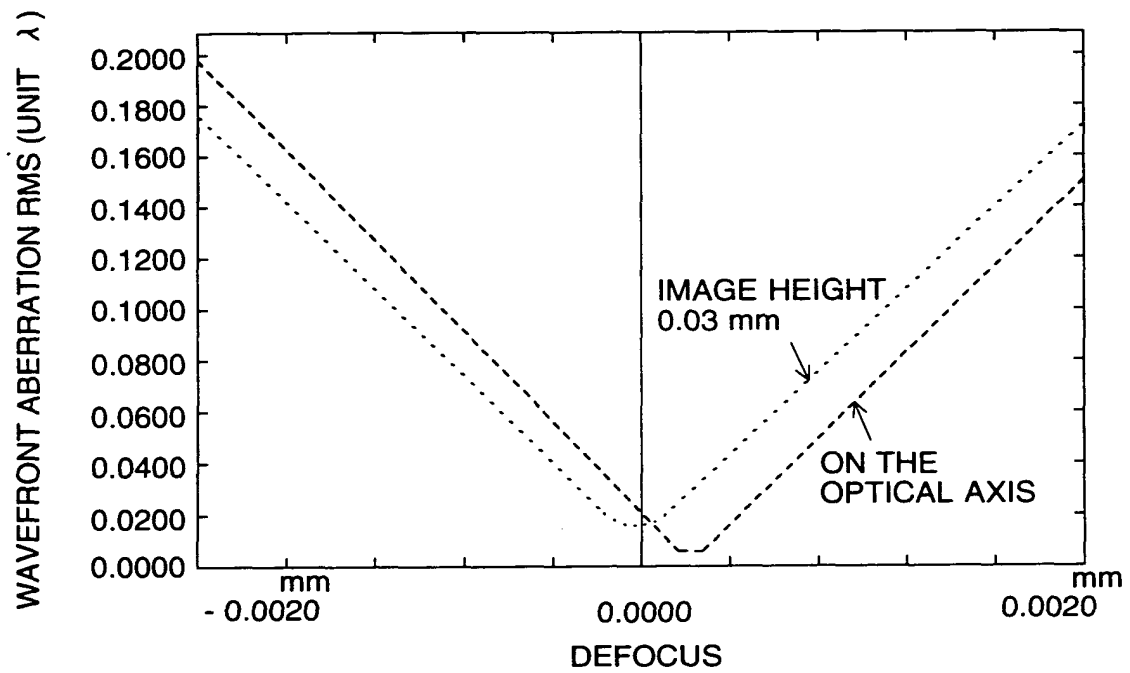


FIG. 36

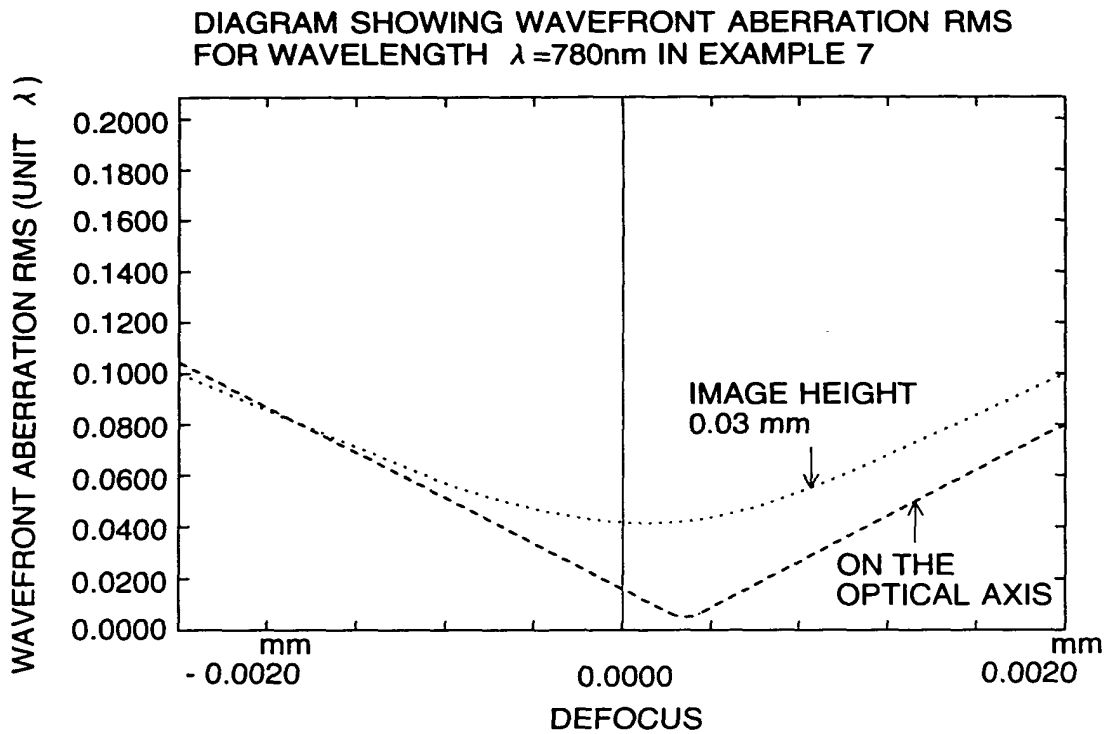


FIG. 37

CROSS SECTIONAL VIEW OF EXAMPLE 8 AND ILLUSTRATION
 SHOWING OPTICAL PATH FOR WAVELENGTH $\lambda = 650\text{nm}$

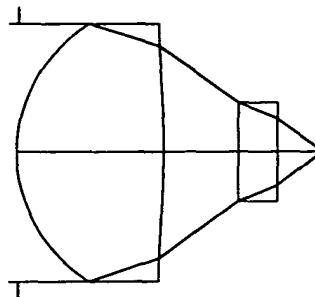


FIG. 38

CROSS SECTIONAL VIEW OF EXAMPLE 8 AND ILLUSTRATION
SHOWING OPTICAL PATH FOR WAVELENGTH $\lambda = 780\text{nm}$

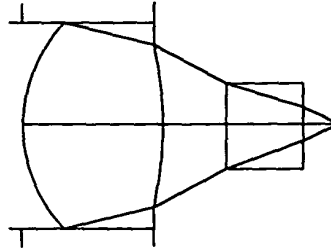


FIG. 39

DIAGRAM SHOWING SPHERICAL ABERRATION
FOR WAVELENGTH $\lambda = 650 \pm 10\text{nm}$ IN EXAMPLE 8

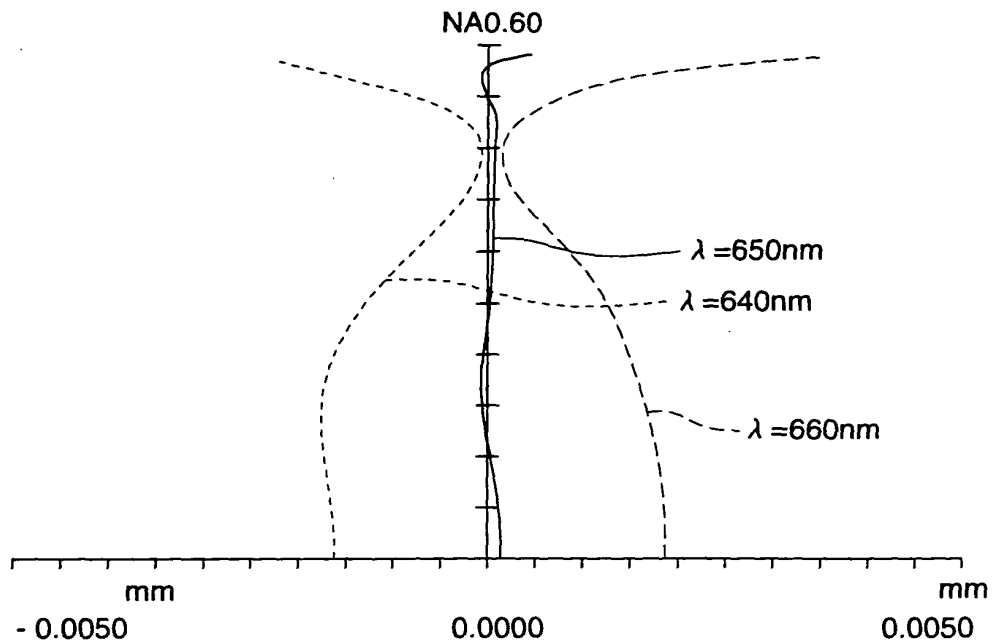


FIG. 40

DIAGRAM SHOWING SPHERICAL ABERRATION
FOR WAVELENGTH $\lambda = 780 \pm 10 \text{ nm}$ IN EXAMPLE 8

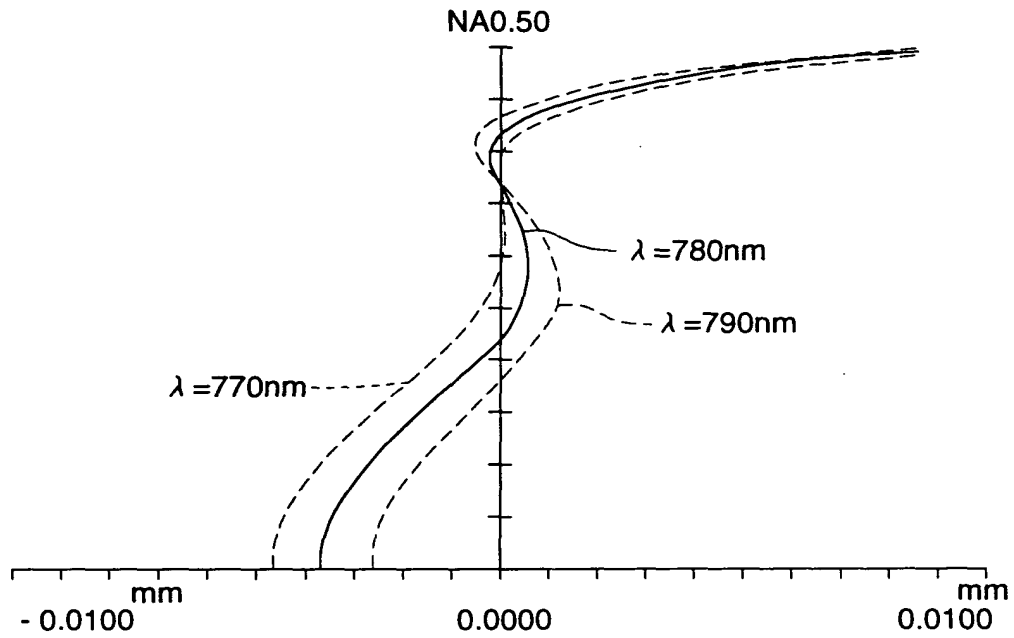


FIG. 41

DIAGRAM SHOWING SPHERICAL ABERRATION
FOR WAVELENGTH $\lambda = 780\text{nm}$ (NA0.60) IN EXAMPLE 8

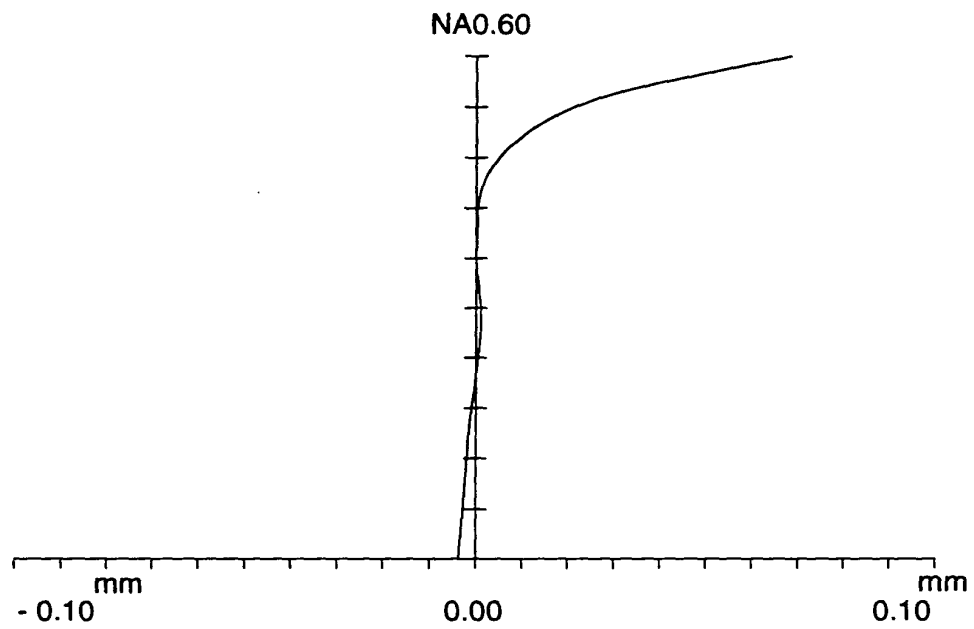


FIG. 42

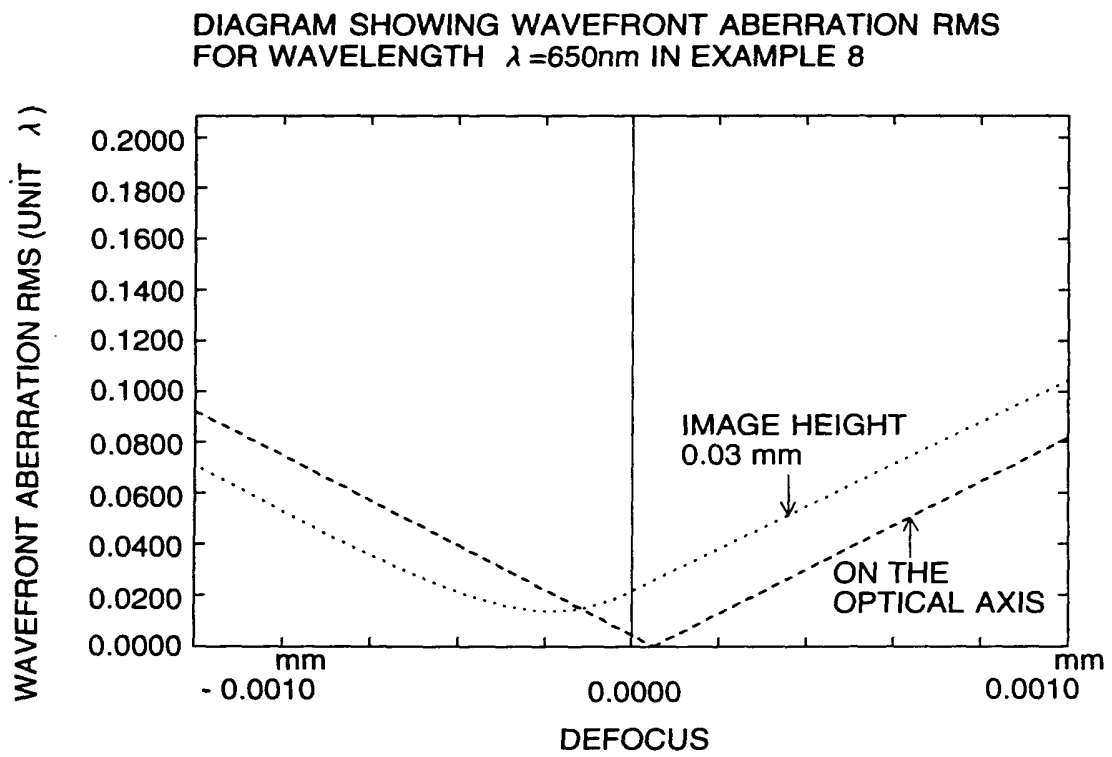


FIG. 43

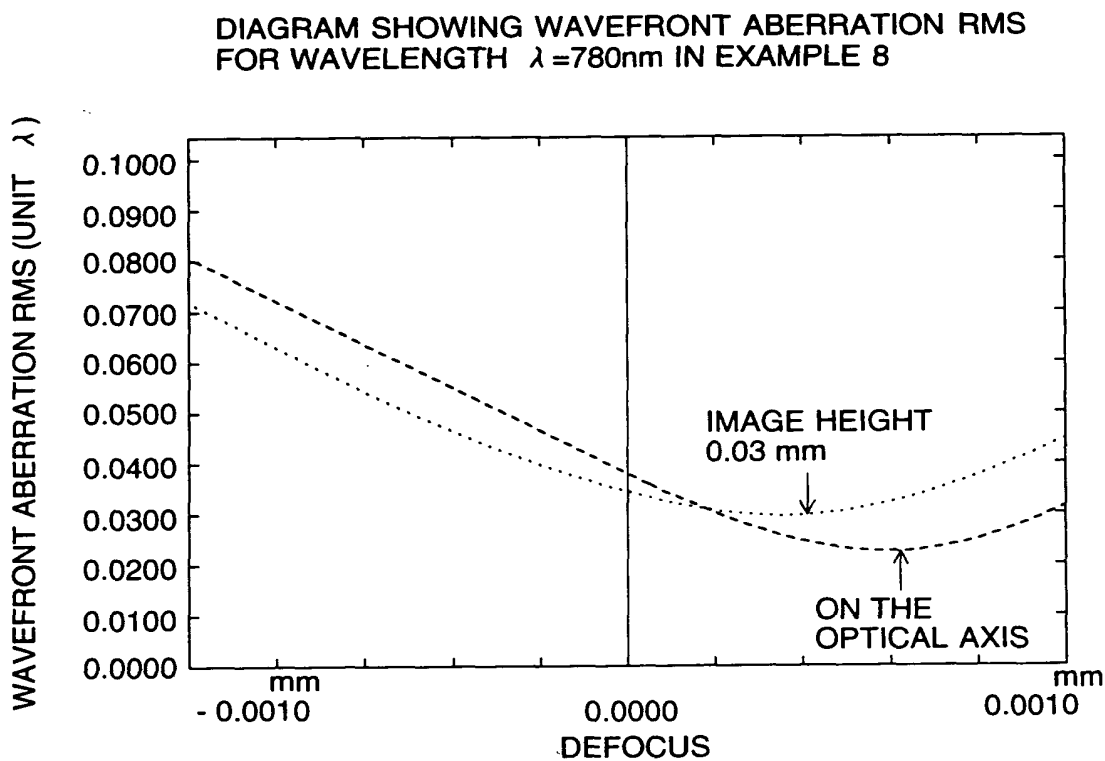


FIG. 44

RELATIONSHIP BETWEEN NUMBER OF DIFFRACTING
ANNULAR BANDS AND HEIGHT FROM THE OPTICAL
AXIS IN EXAMPLE 6

HMAX 2.0084 (HEIGHT FROM THE OPTICAL AXIS)

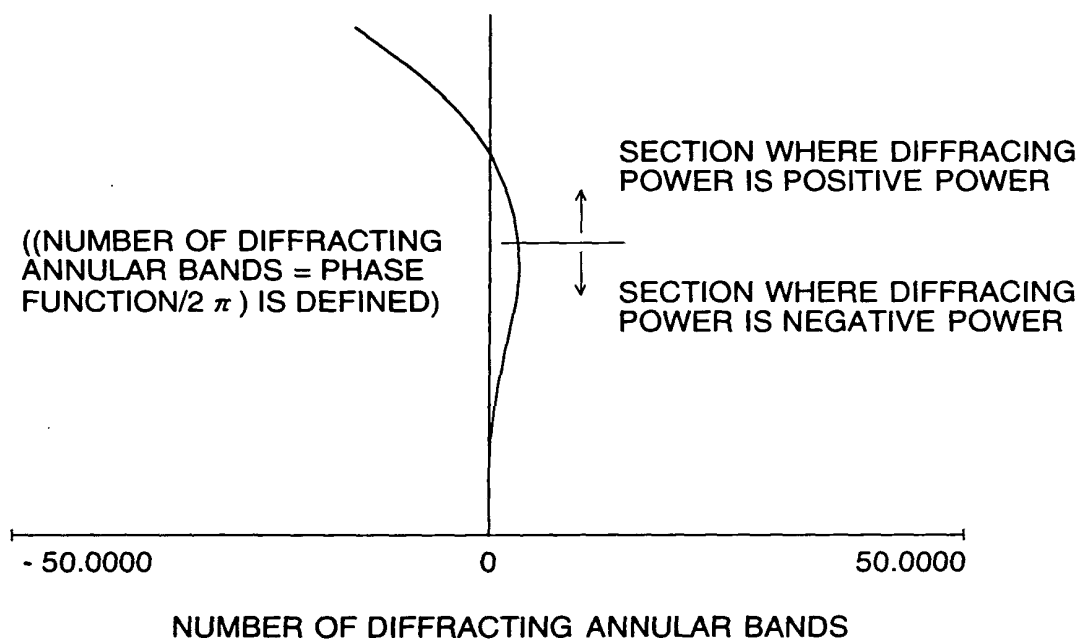


FIG. 45

RELATIONSHIP BETWEEN NUMBER OF DIFFRACTING
ANNULAR BANDS AND HEIGHT FROM THE OPTICAL
AXIS IN EXAMPLE 7

HMAX 2.0082 (HEIGHT FROM THE OPTICAL AXIS)

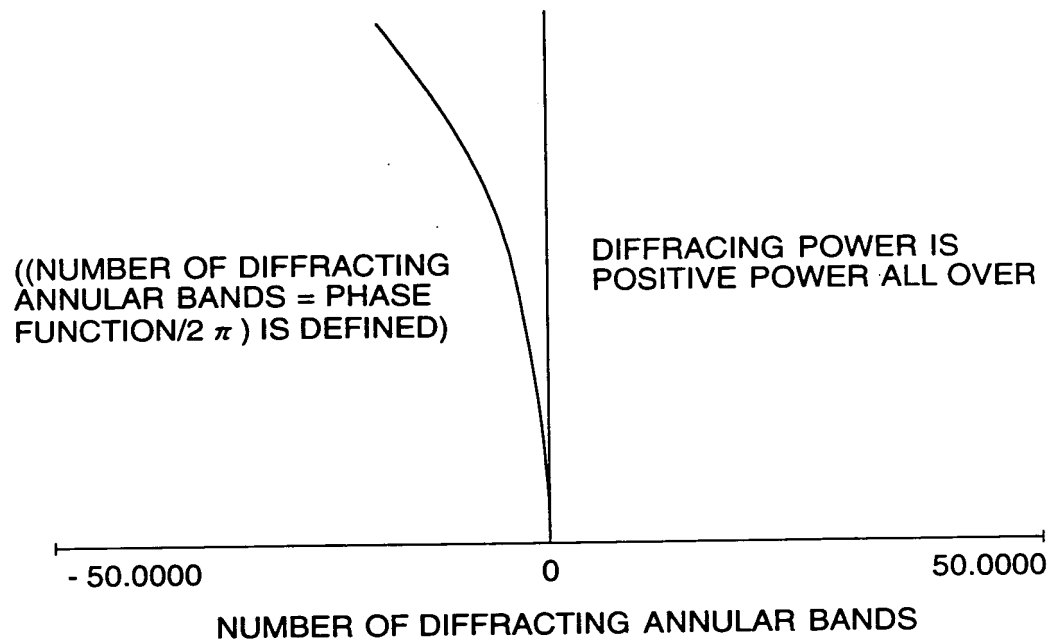


FIG. 46

RELATIONSHIP BETWEEN NUMBER OF DIFFRACTING
ANNULAR BANDS AND HEIGHT FROM THE OPTICAL
AXIS IN EXAMPLE 8

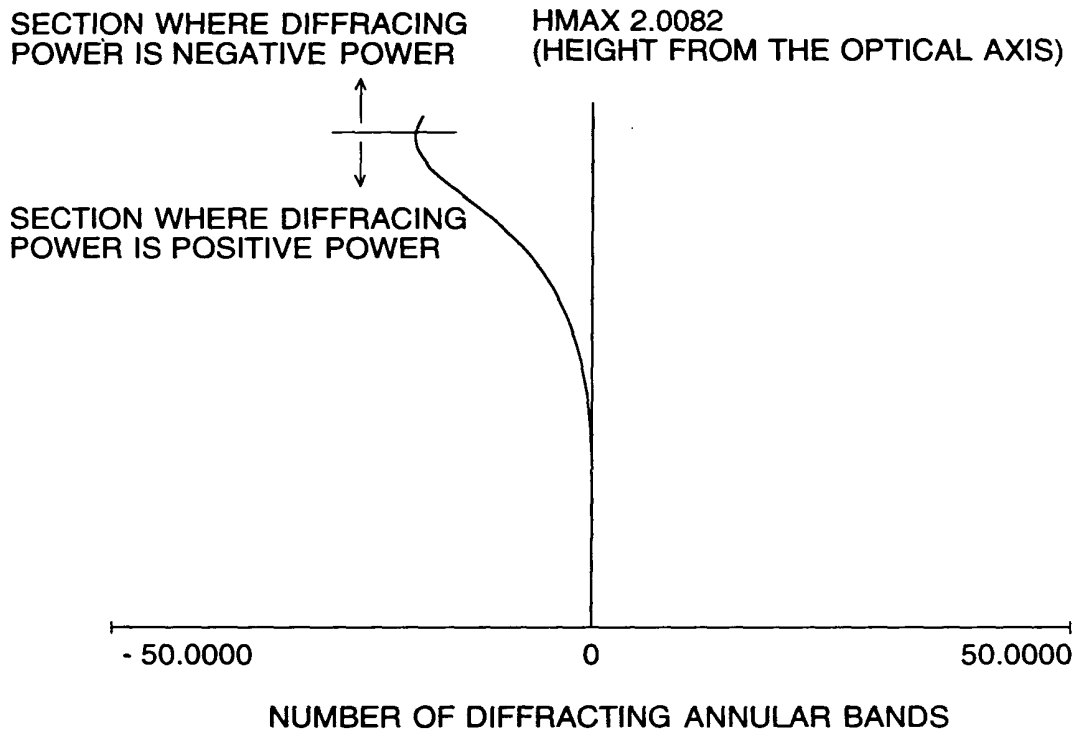


FIG. 47 (a)

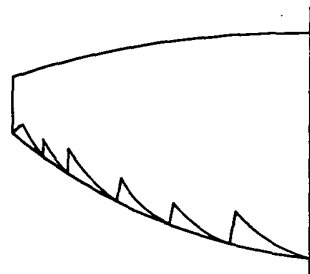


FIG. 47 (b)

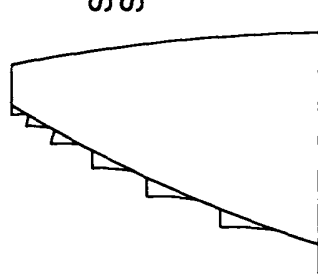


FIG. 47 (c)

POSITIVE
DIFFRACTION POWER

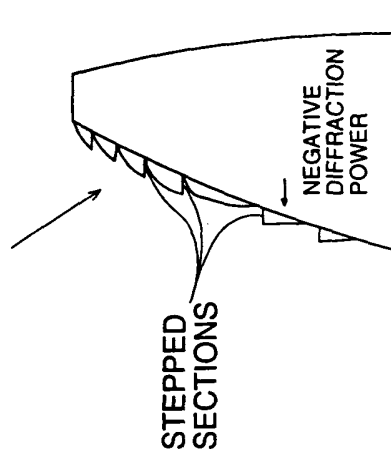
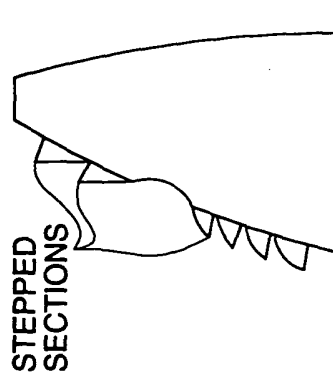


FIG. 47 (d)



POSITIVE
DIFFRACTION
POWER

NEGATIVE
DIFFRACTION
POWER

LENS IN WHICH
DIFFRACTION POWER IS
NEGATIVE POWER IN THE
VICINITY OF OPTICAL AXIS
AND IS CHANGED TO
POSITIVE POWER FROM
MIDDLE POINT

LENS IN WHICH DIFFRACTION
POWER IS POSITIVE POWER
IN THE VICINITY OF OPTICAL
AXIS AND IS CHANGED TO
NEGATIVE POWER FROM
MIDDLE POINT

RELATIONSHIP BETWEEN DIFFRACTION POWER AND ACTUAL SHAPE

FIG. 48

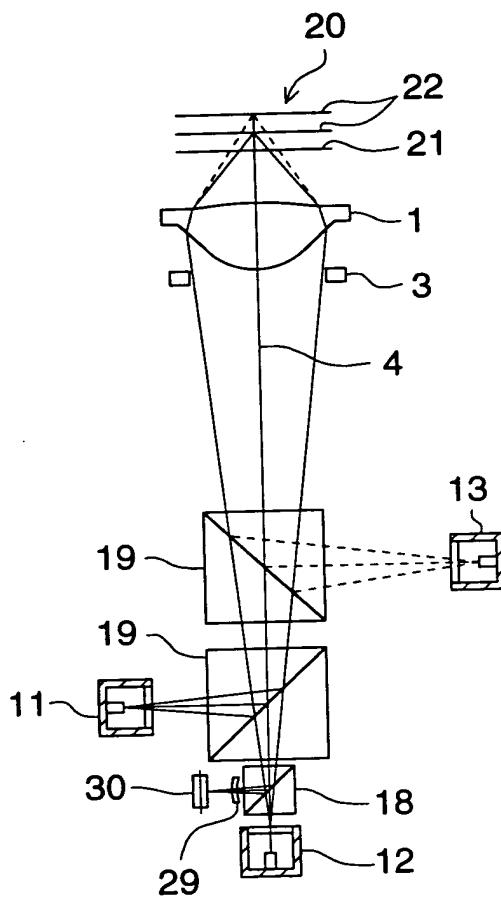


FIG. 49

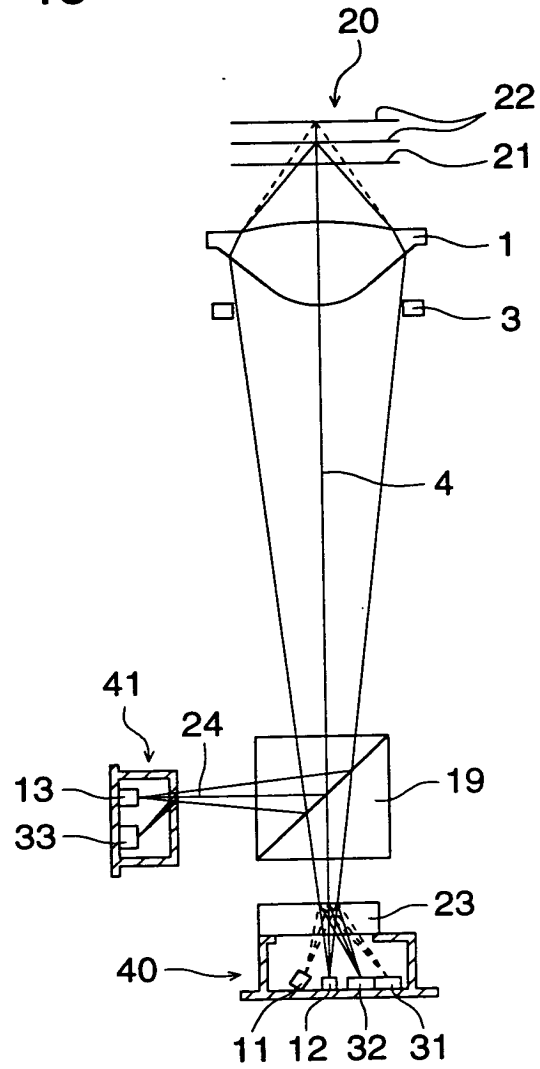


FIG. 50

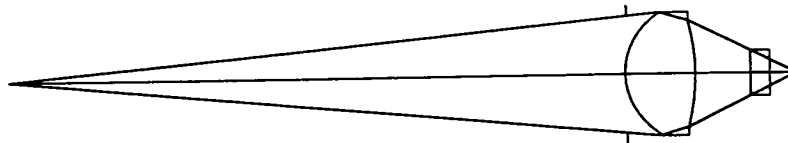


FIG. 51

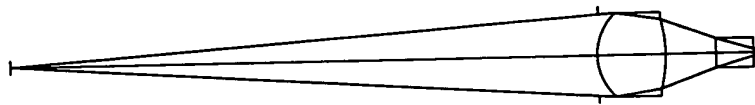


FIG. 52

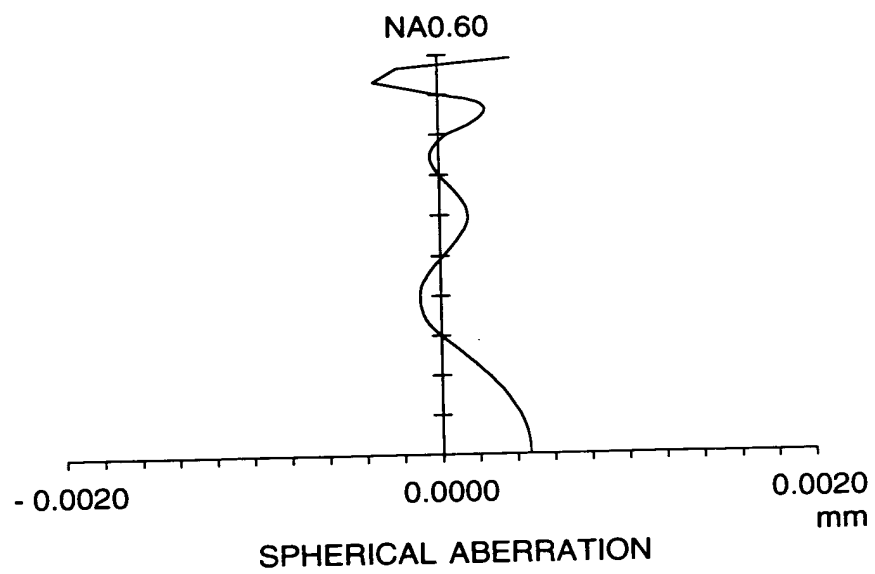


FIG. 53

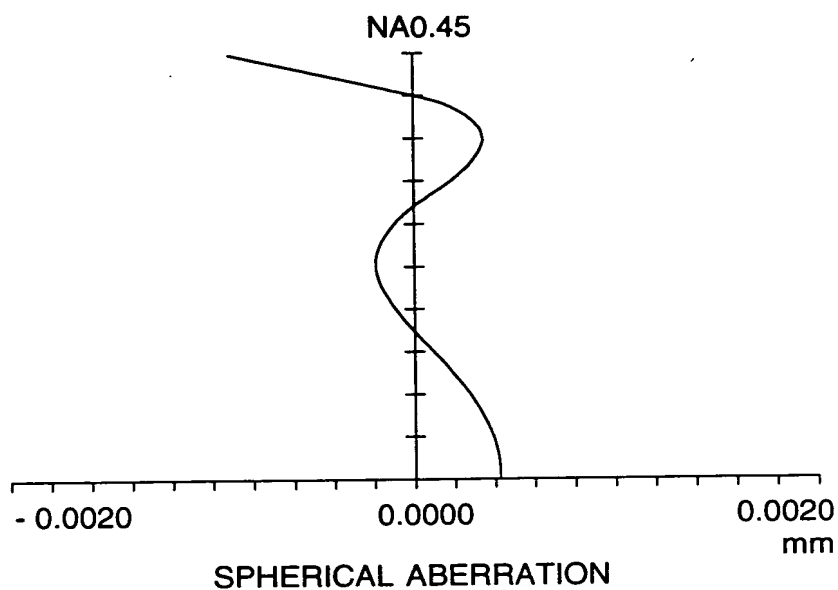


FIG. 54

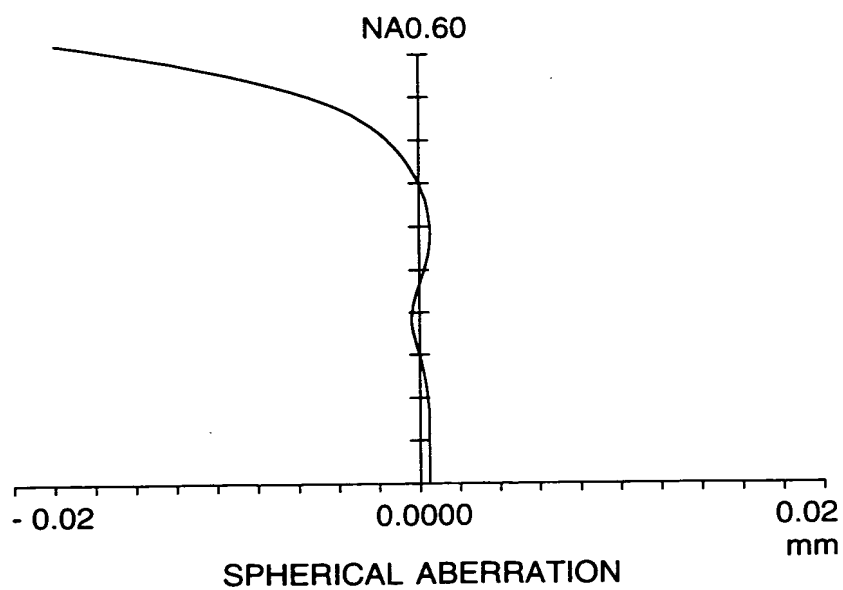


FIG. 55

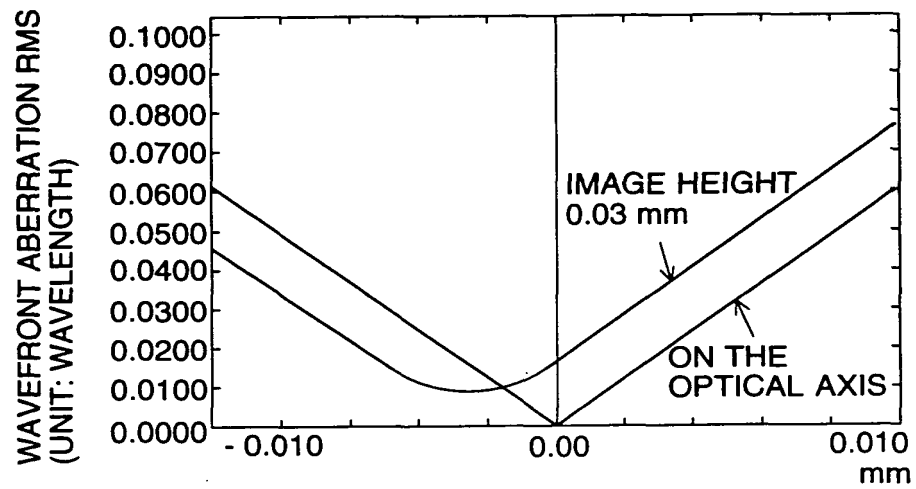


FIG. 56

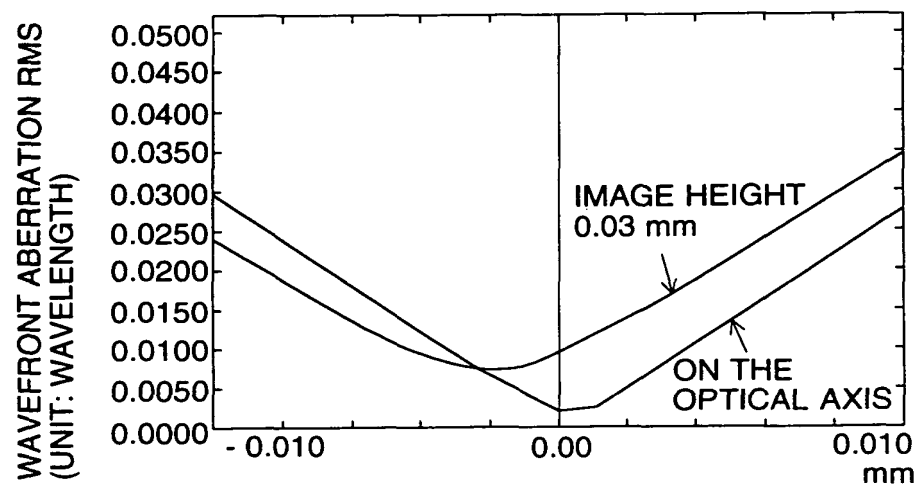


FIG. 57

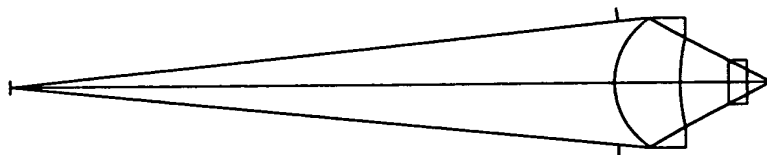


FIG. 58

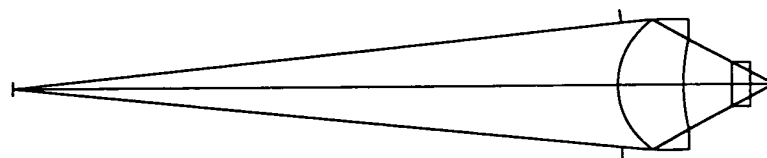


FIG. 59

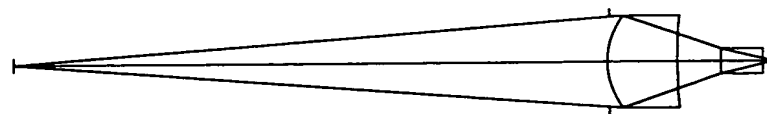


FIG. 60

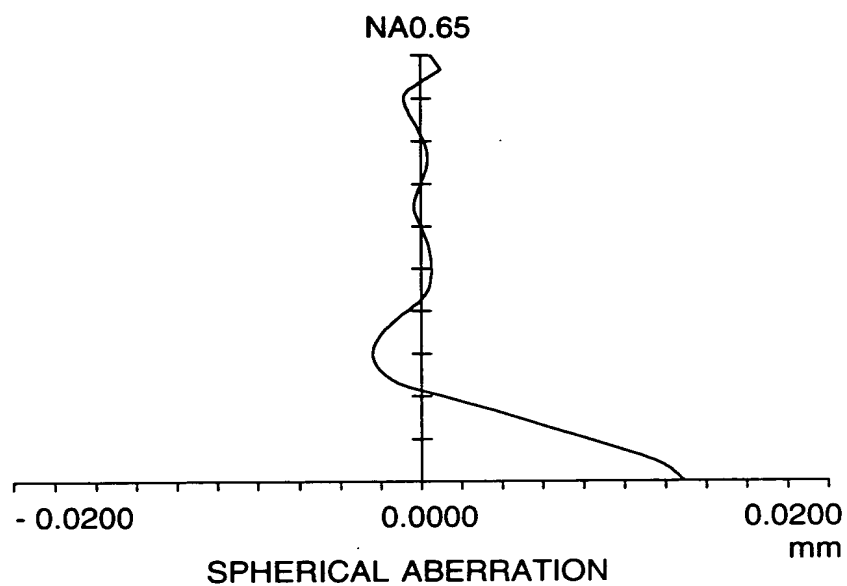


FIG. 61

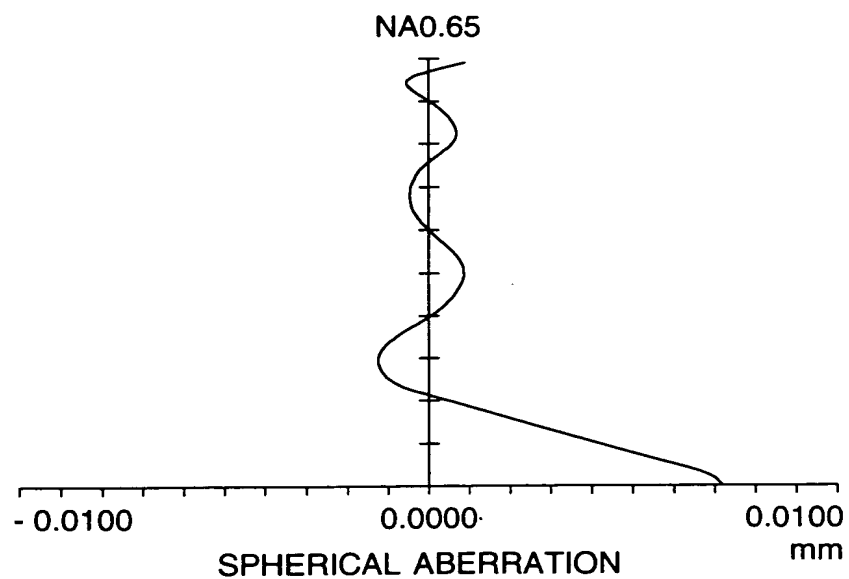


FIG. 62

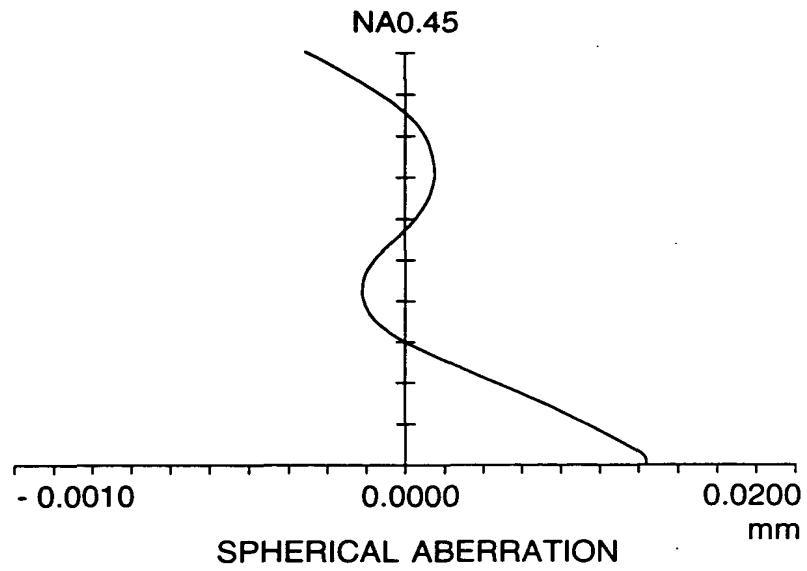


FIG. 63

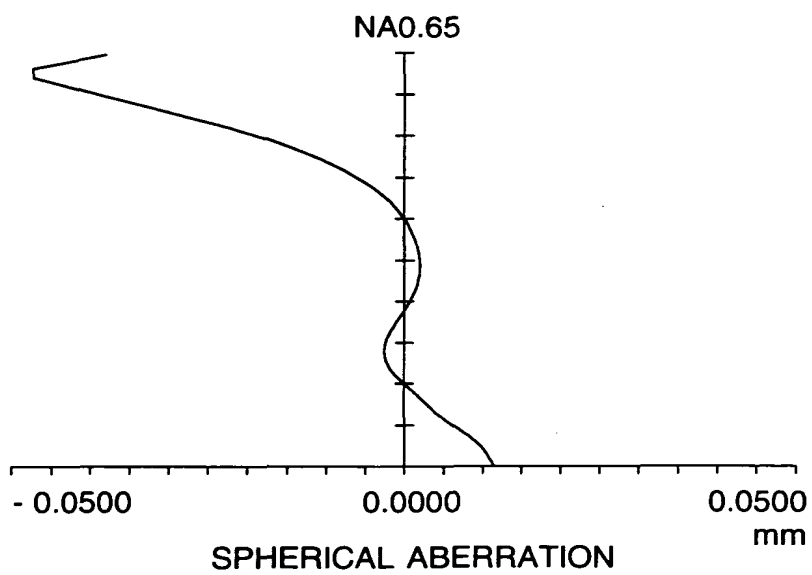


FIG. 64

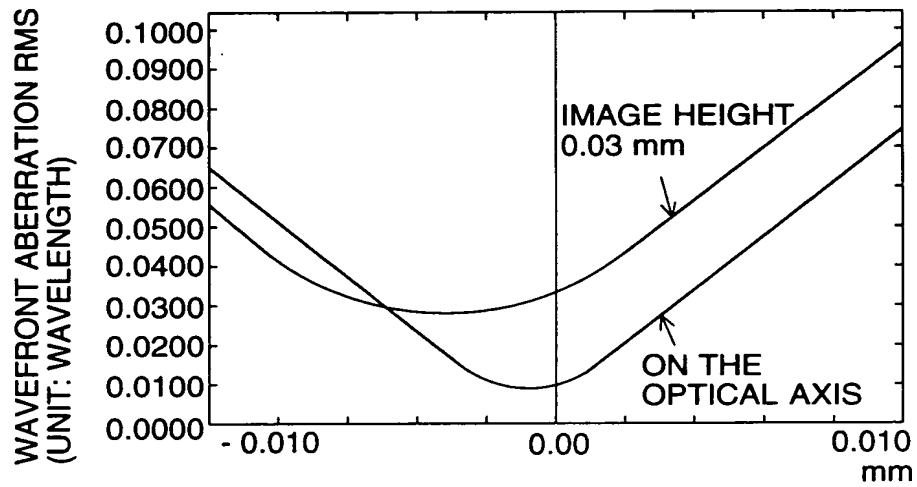


FIG. 65

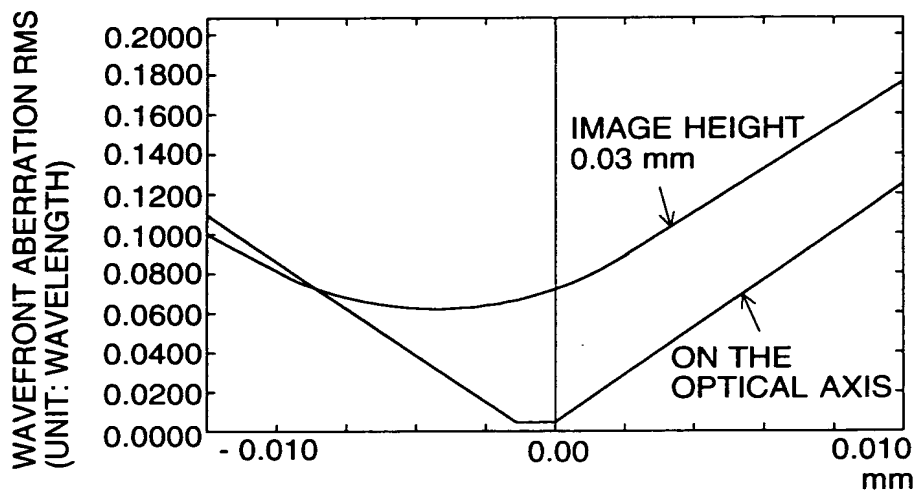


FIG. 66

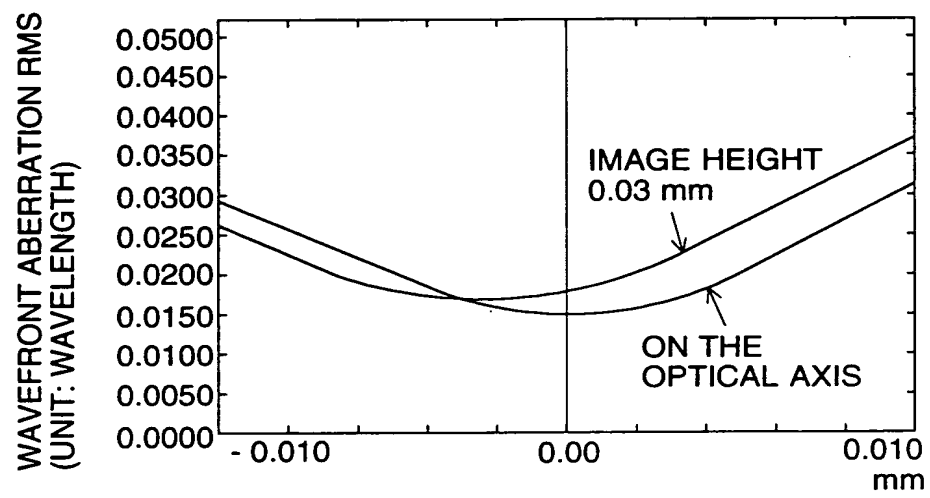


FIG. 67

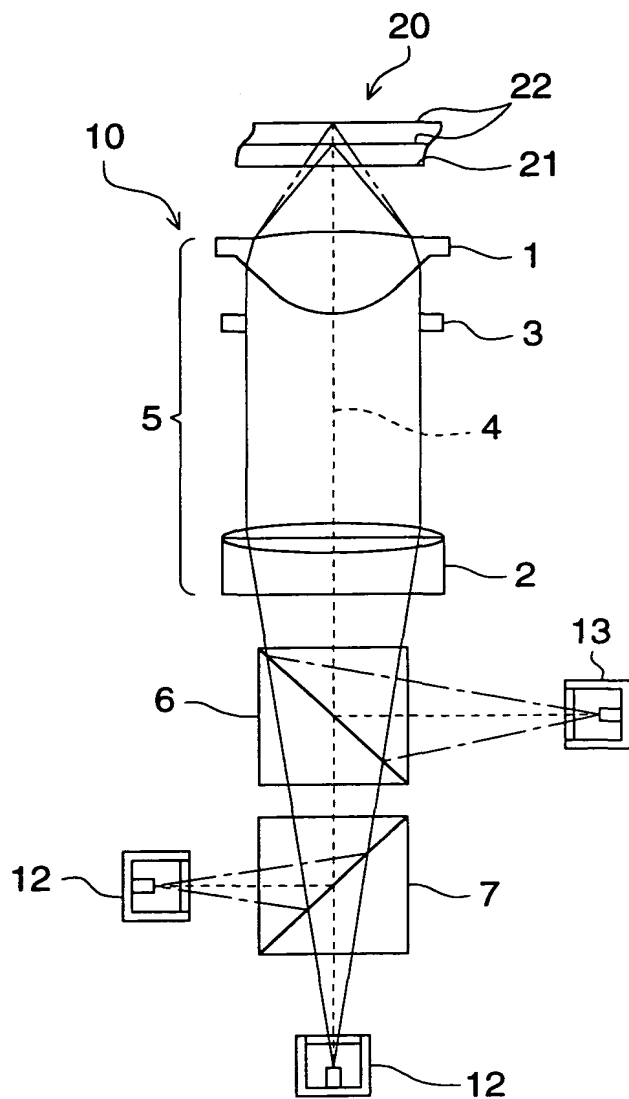


FIG. 68

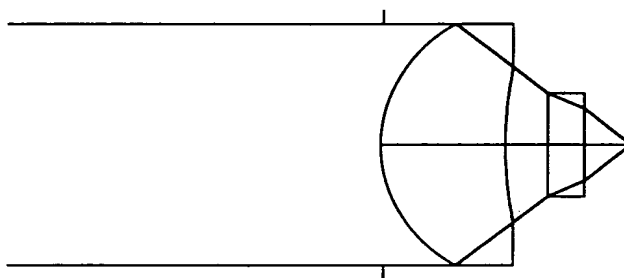


FIG. 69

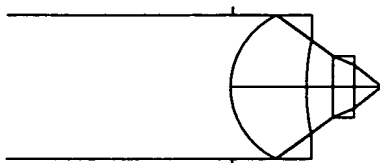


FIG. 70

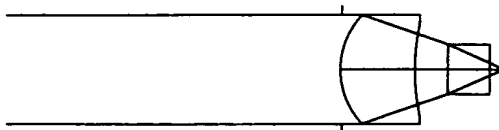


FIG. 71

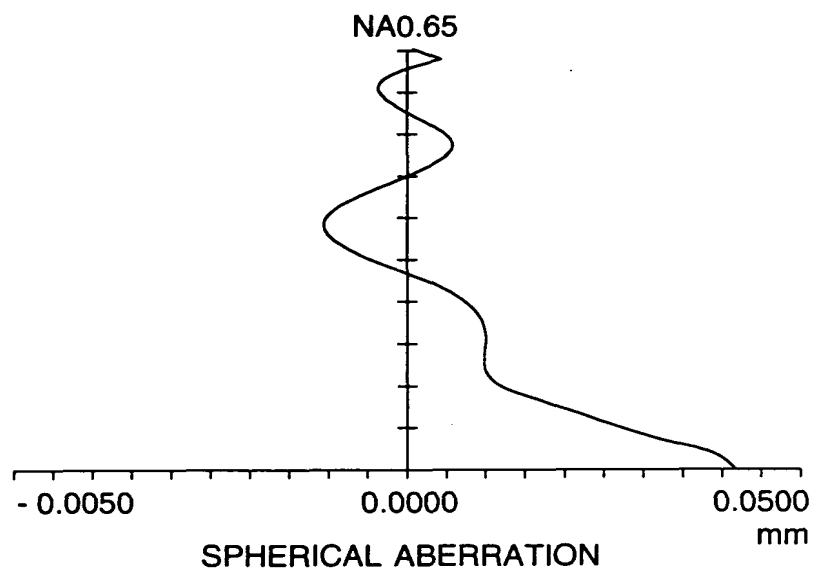


FIG. 72

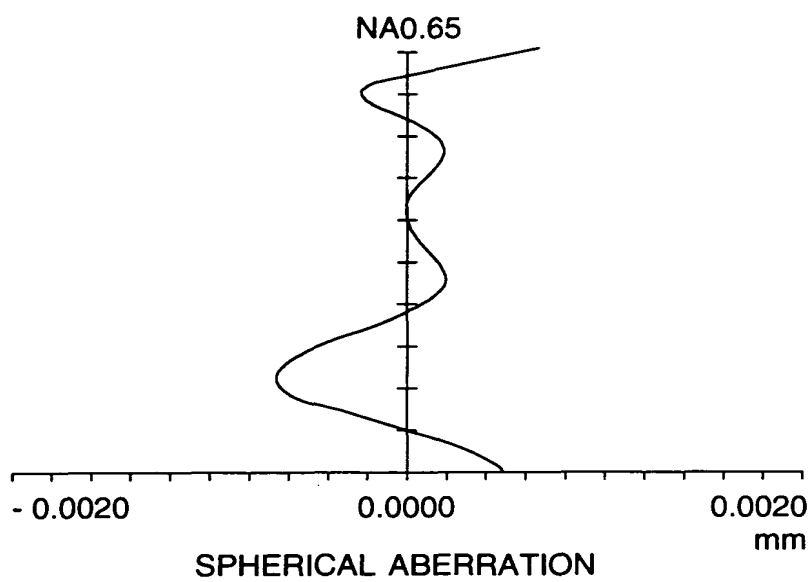


FIG. 73

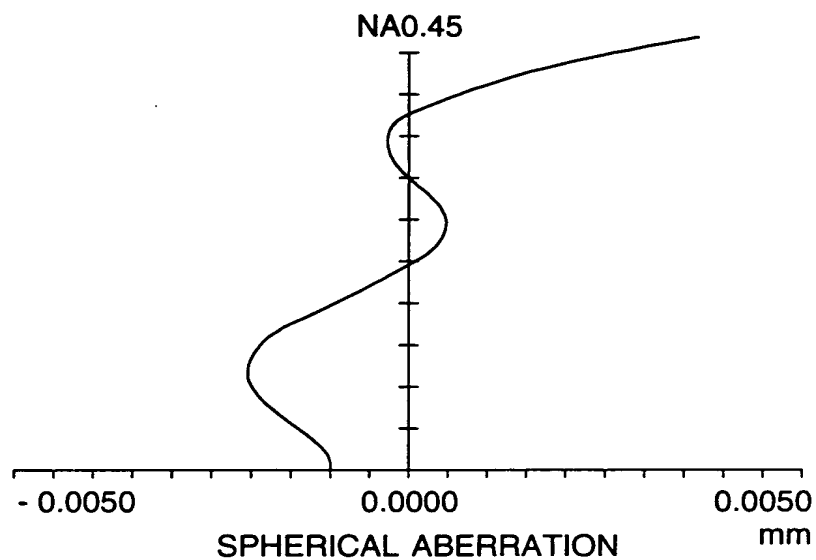


FIG. 74

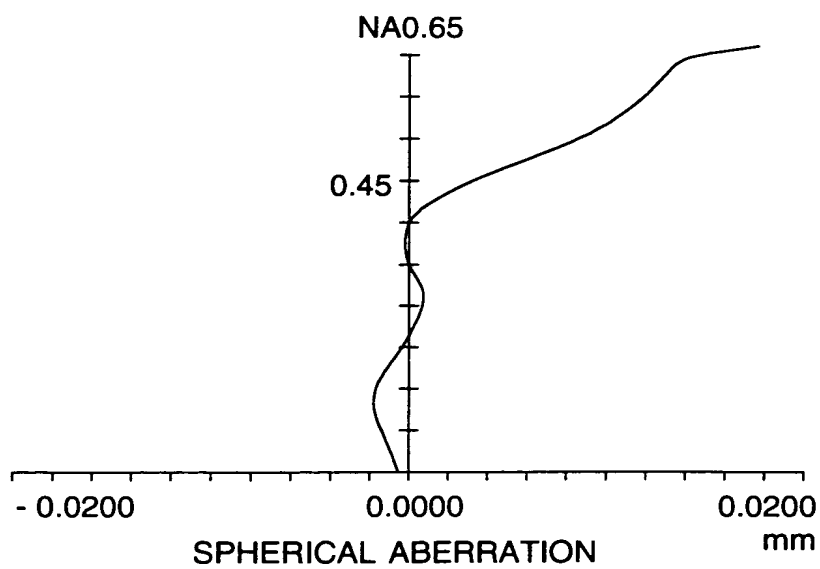


FIG. 75

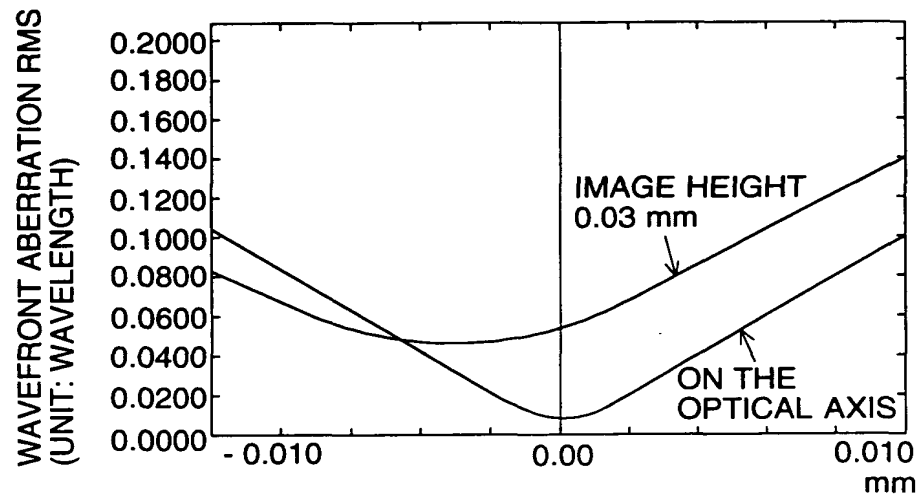


FIG. 76

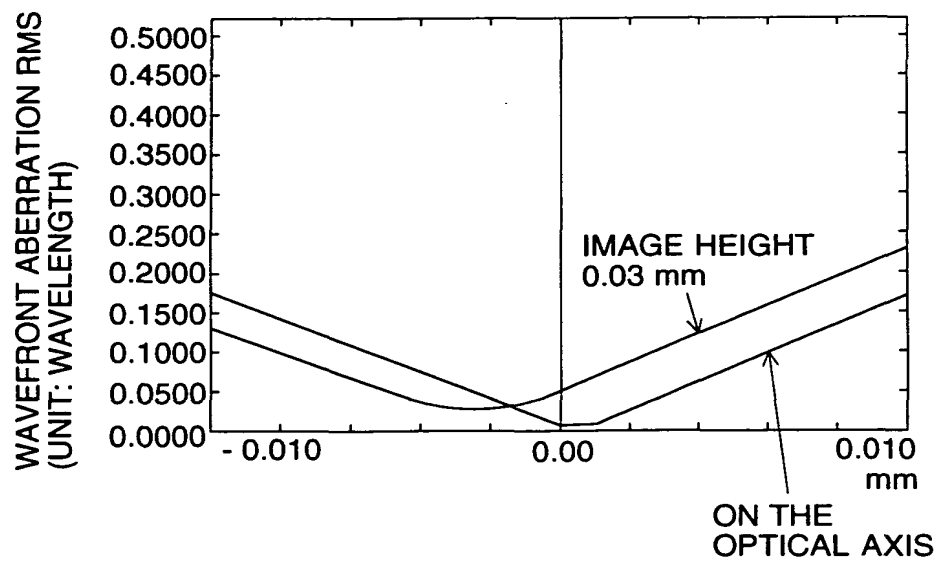


FIG. 77

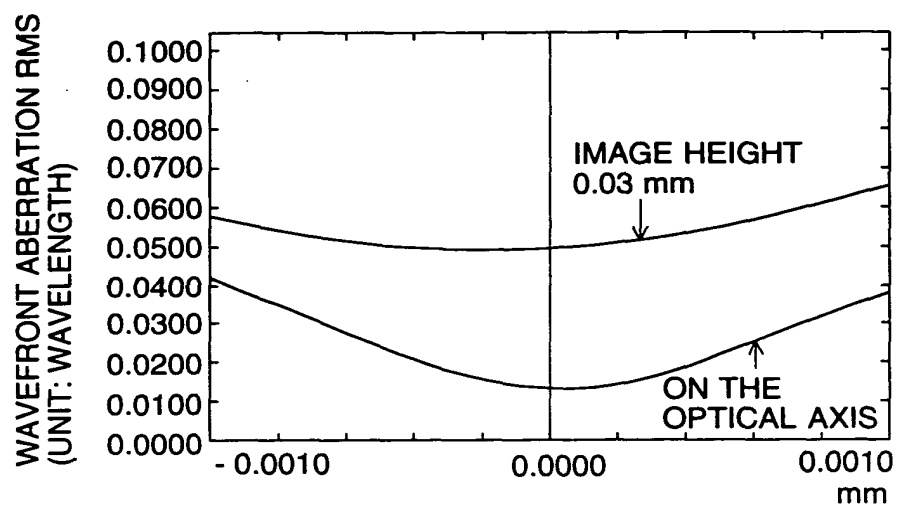


FIG. 78

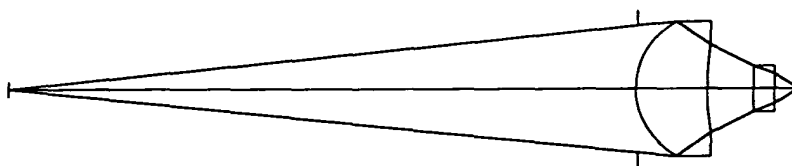


FIG. 79

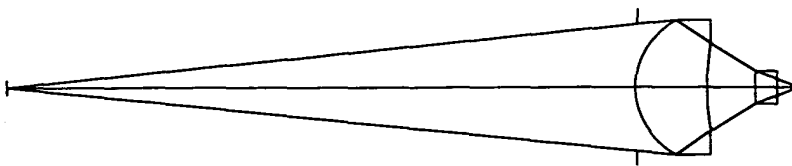


FIG. 80

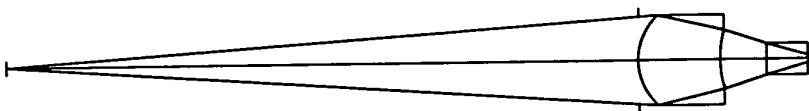


FIG. 81

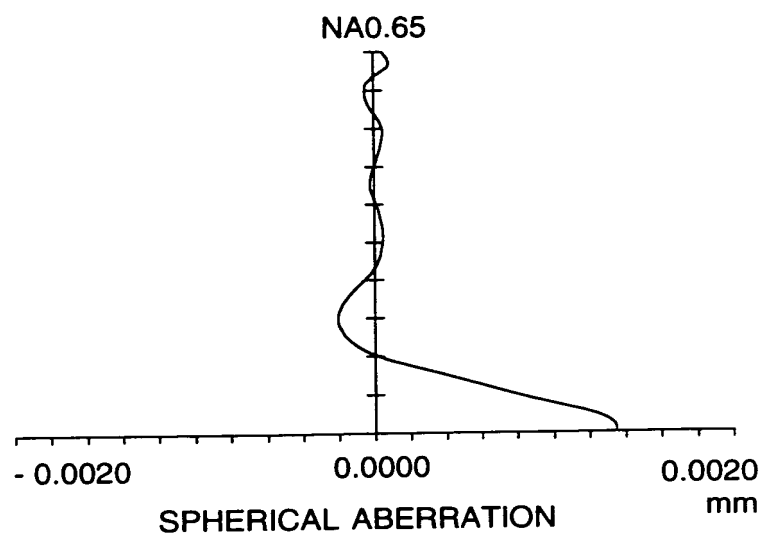


FIG. 82

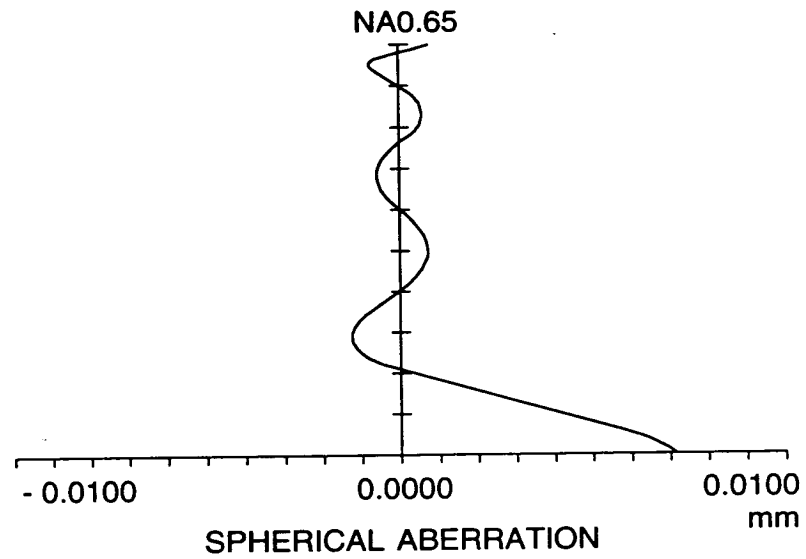


FIG. 83

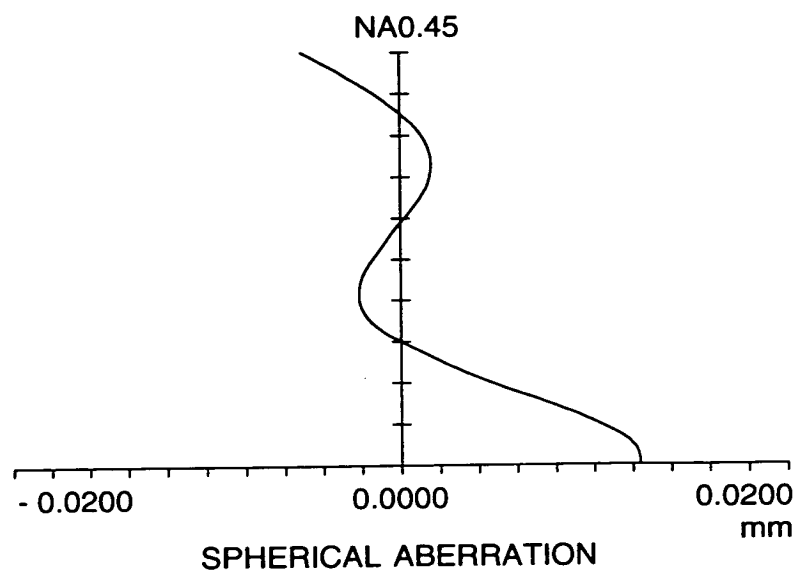


FIG. 84

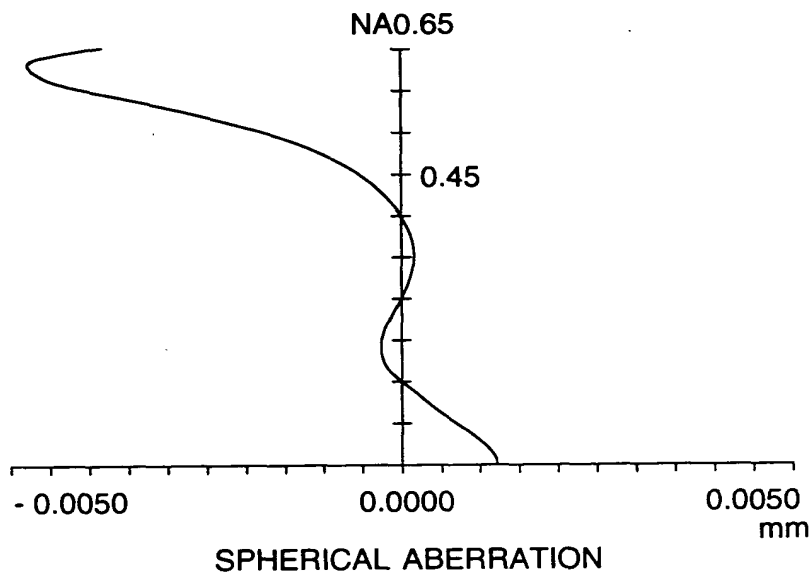


FIG. 85

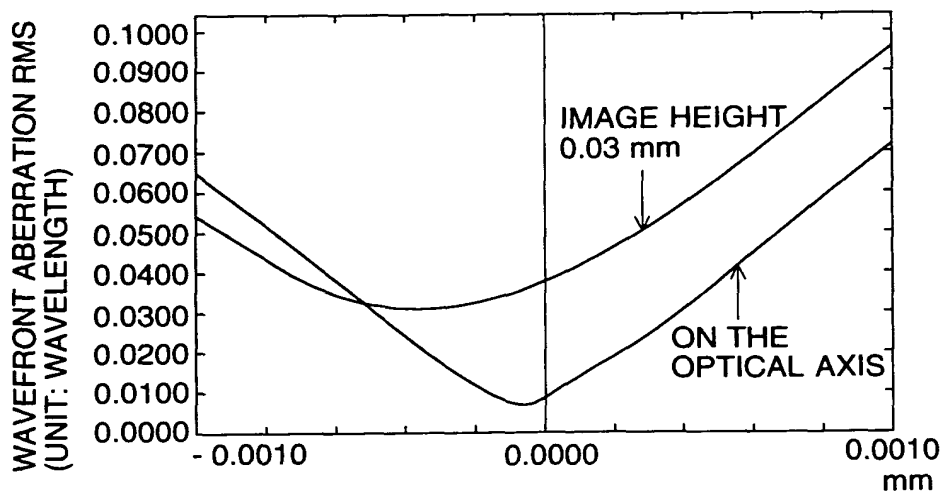


FIG. 86

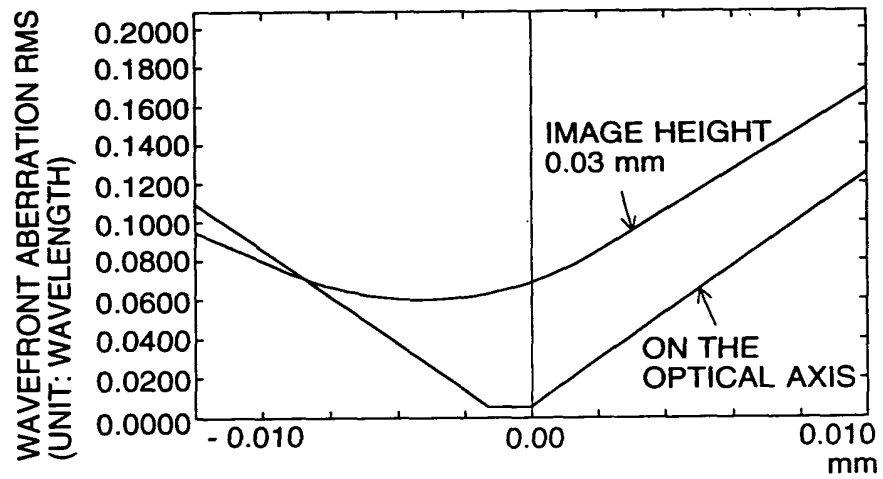


FIG. 87

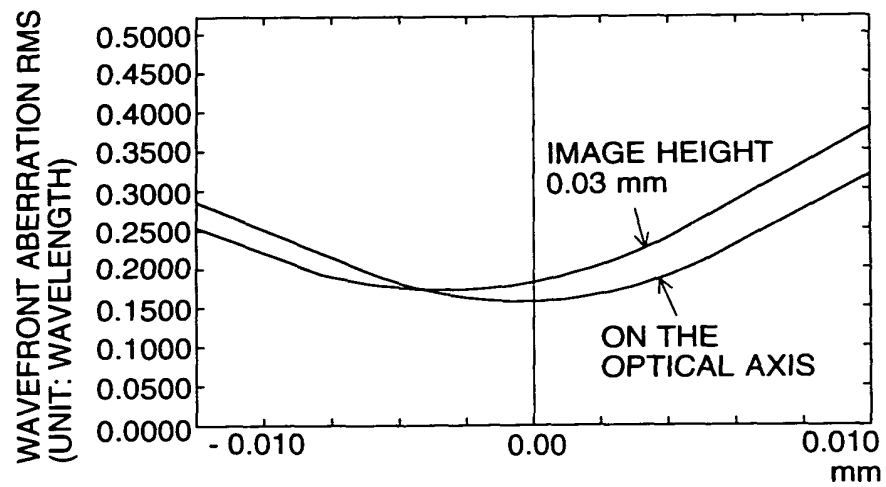


FIG. 88

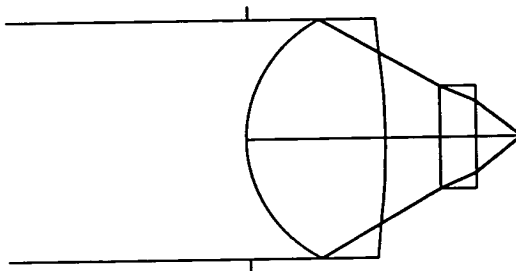


FIG. 89

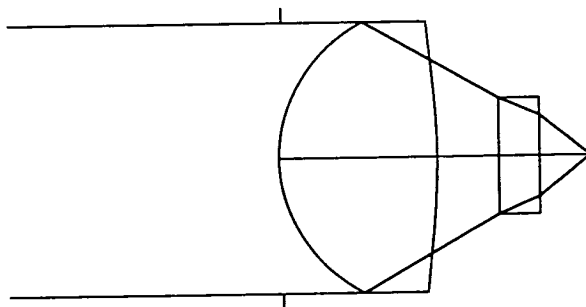


FIG. 90

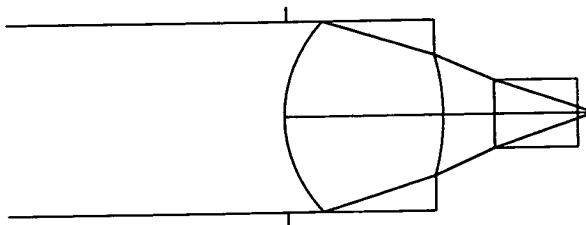


FIG. 91

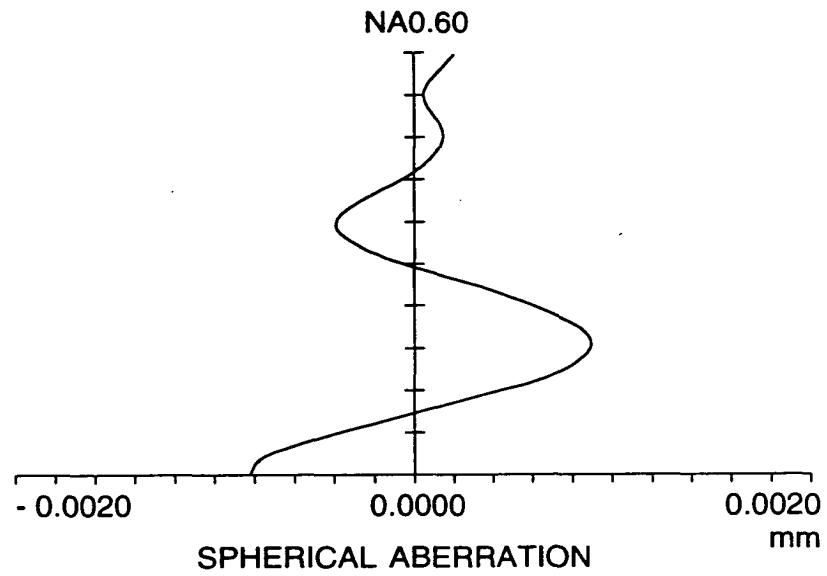


FIG. 92

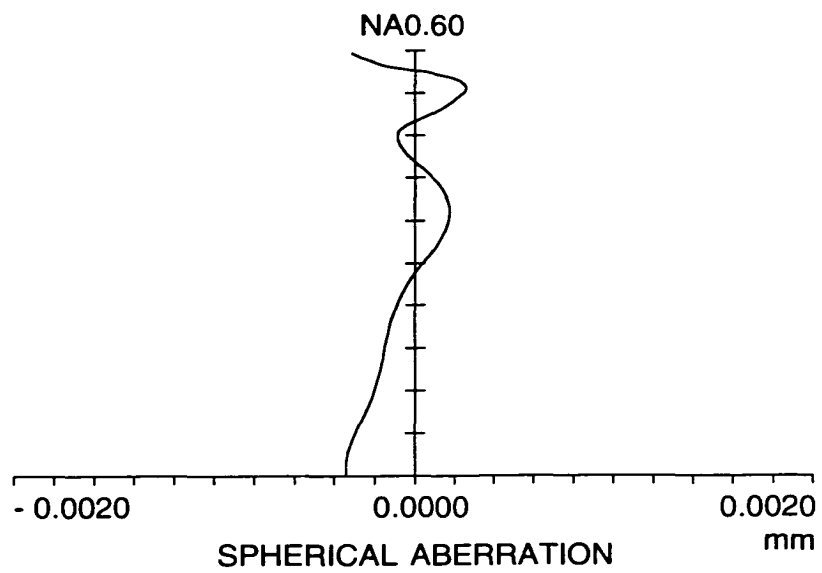


FIG. 93

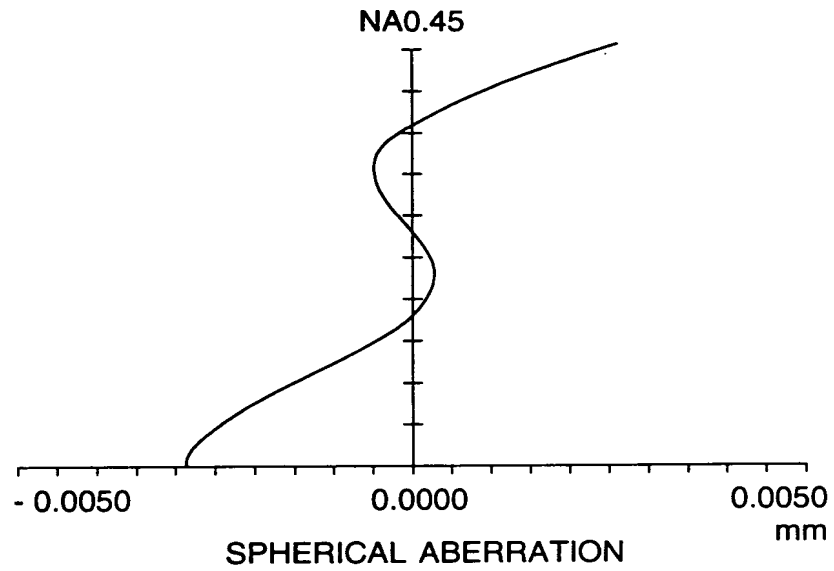


FIG. 94

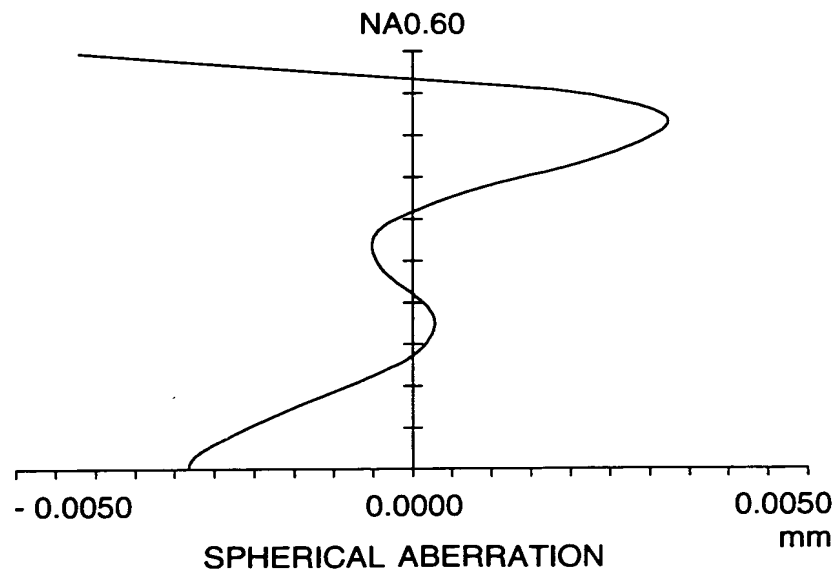


FIG. 95

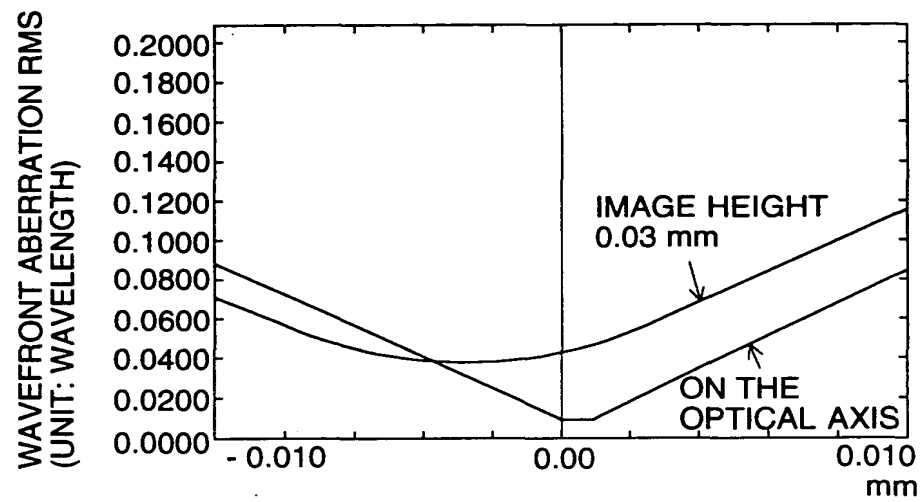


FIG. 96

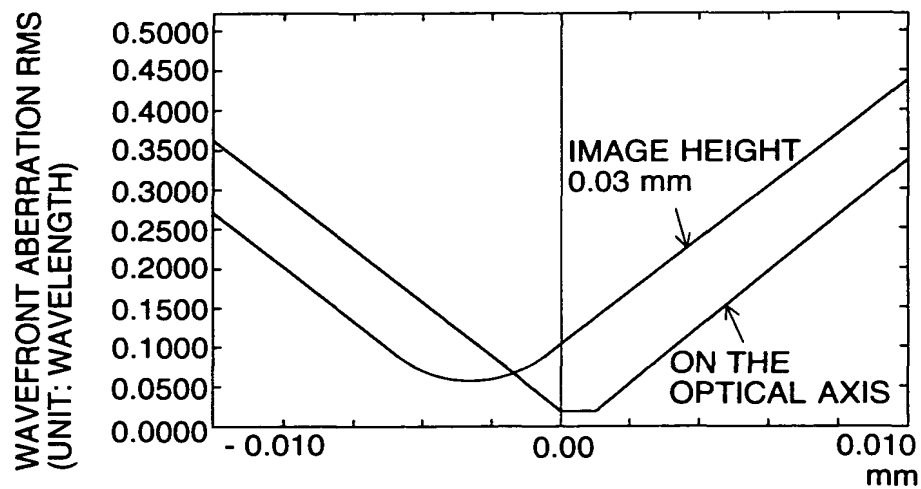


FIG. 97

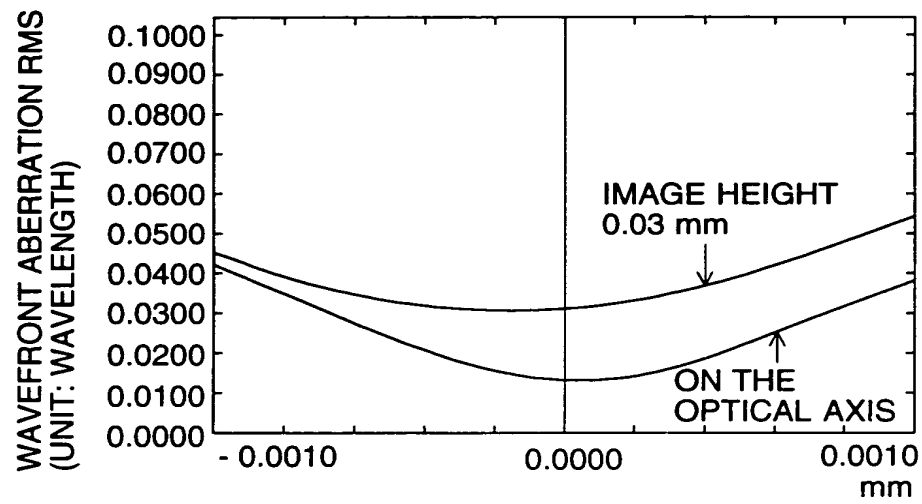
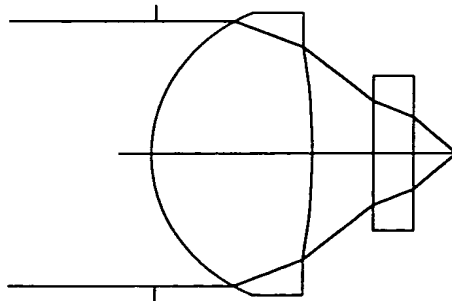


FIG. 98



CROSS SECTIONAL VIEW OF OBJECTIVE LENS AND ILLUSTRATION
 SHOWING OPTICAL PATH FOR WAVELENGTH $\lambda = 400\text{nm}$

FIG. 99

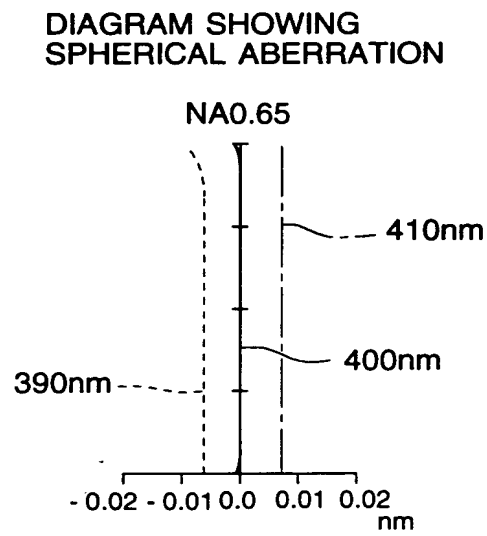


FIG. 100

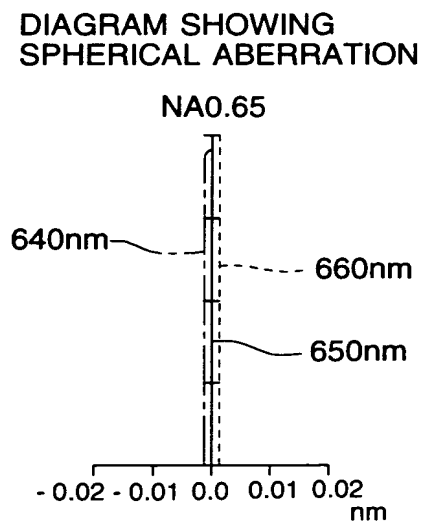


FIG. 101

DIAGRAM SHOWING
SPHERICAL ABERRATION

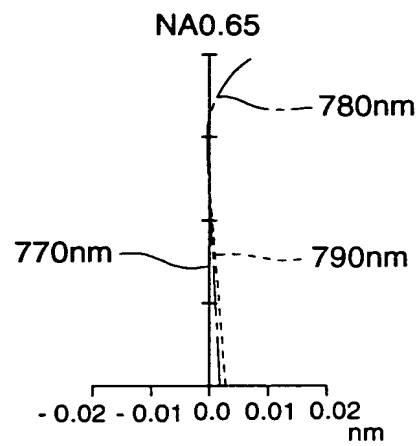


FIG. 102

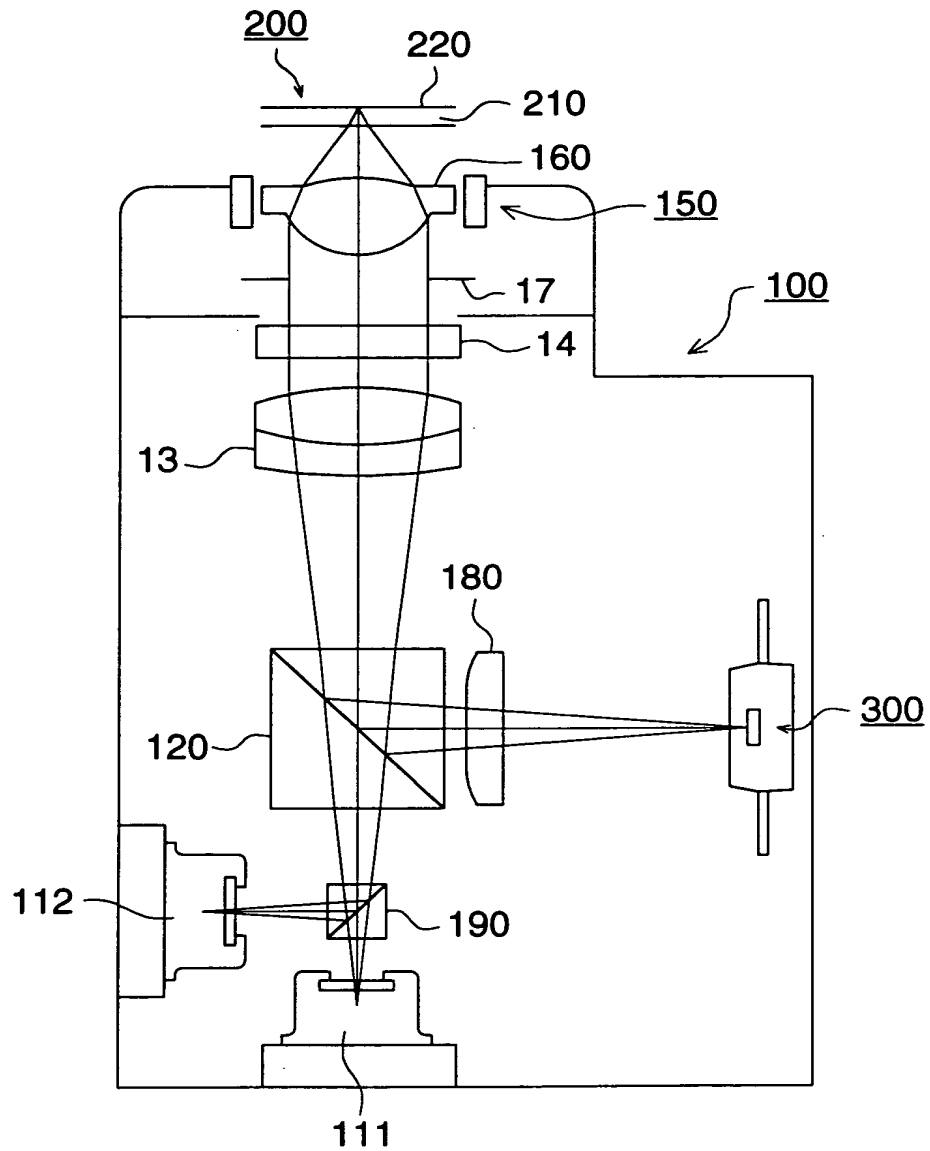


FIG. 103

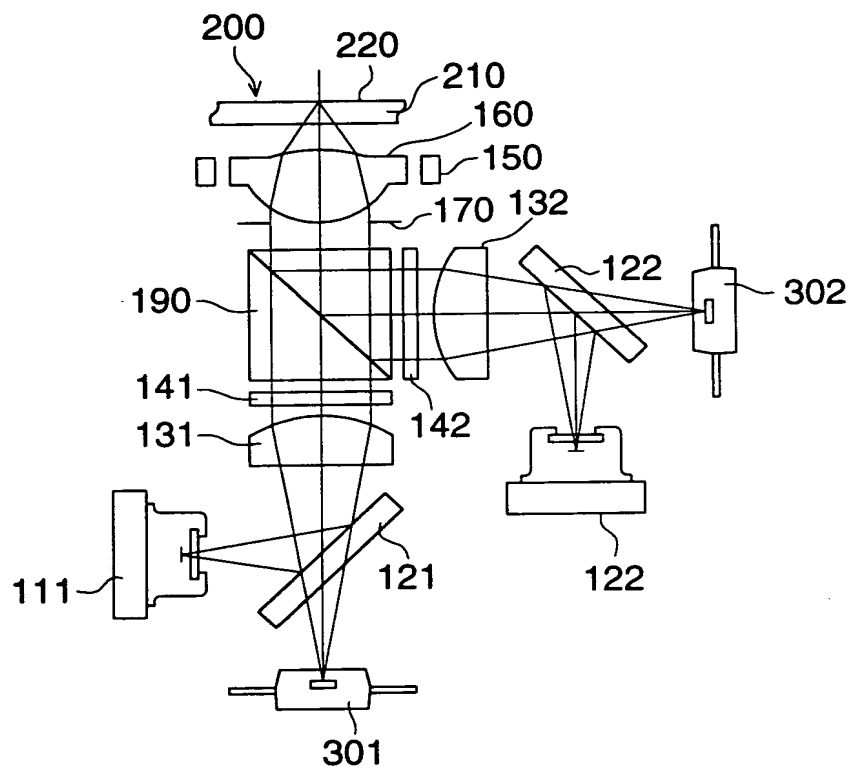


FIG. 104

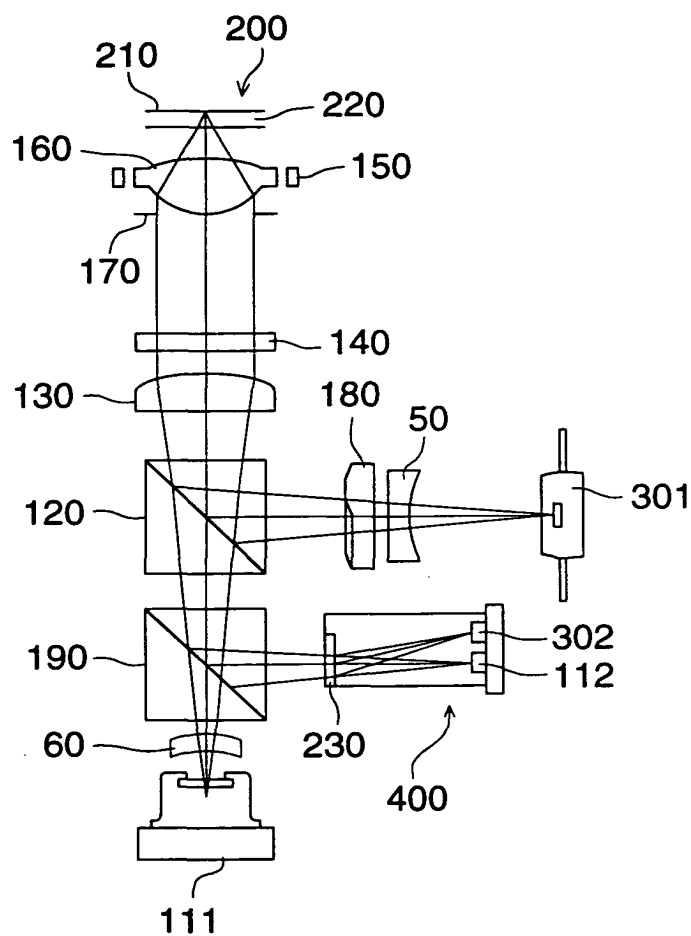


FIG. 105

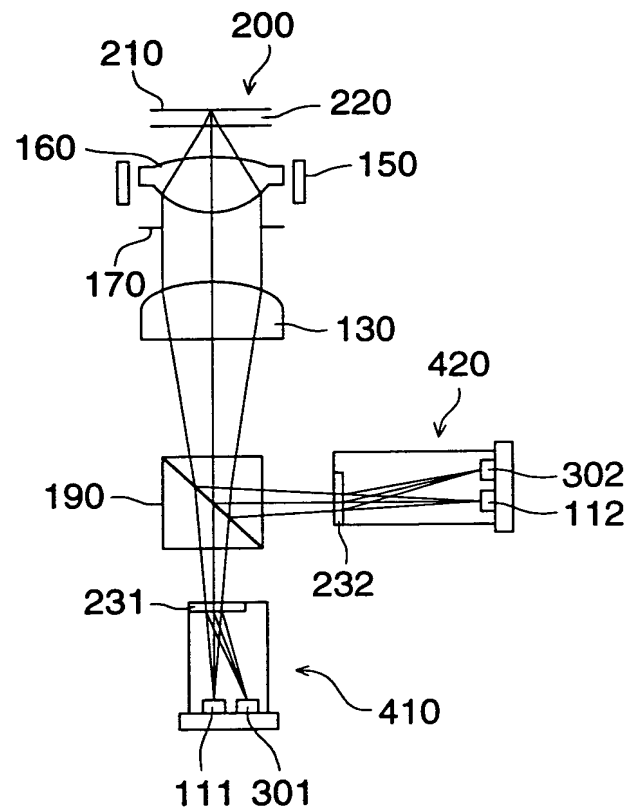


FIG. 106

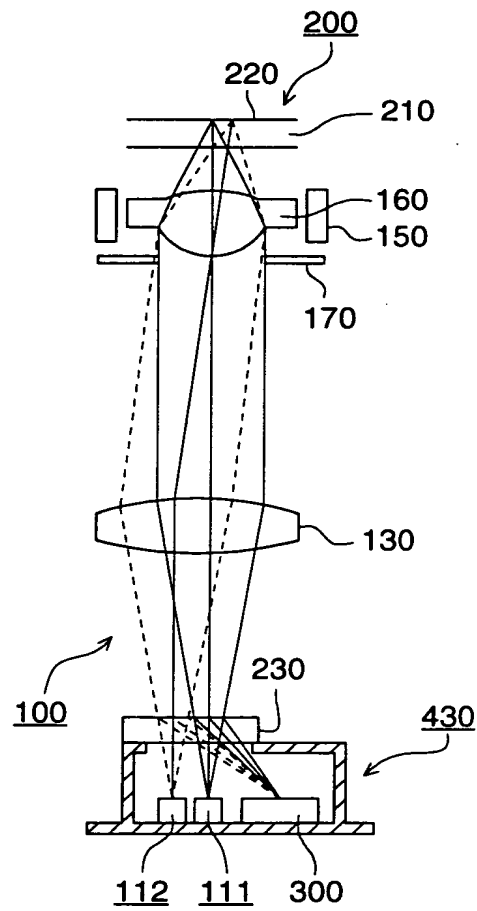


FIG. 107

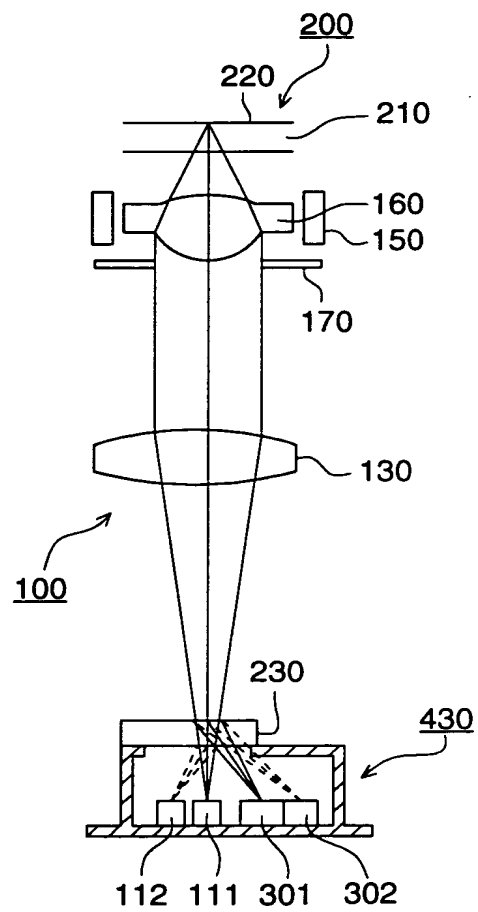


FIG. 108

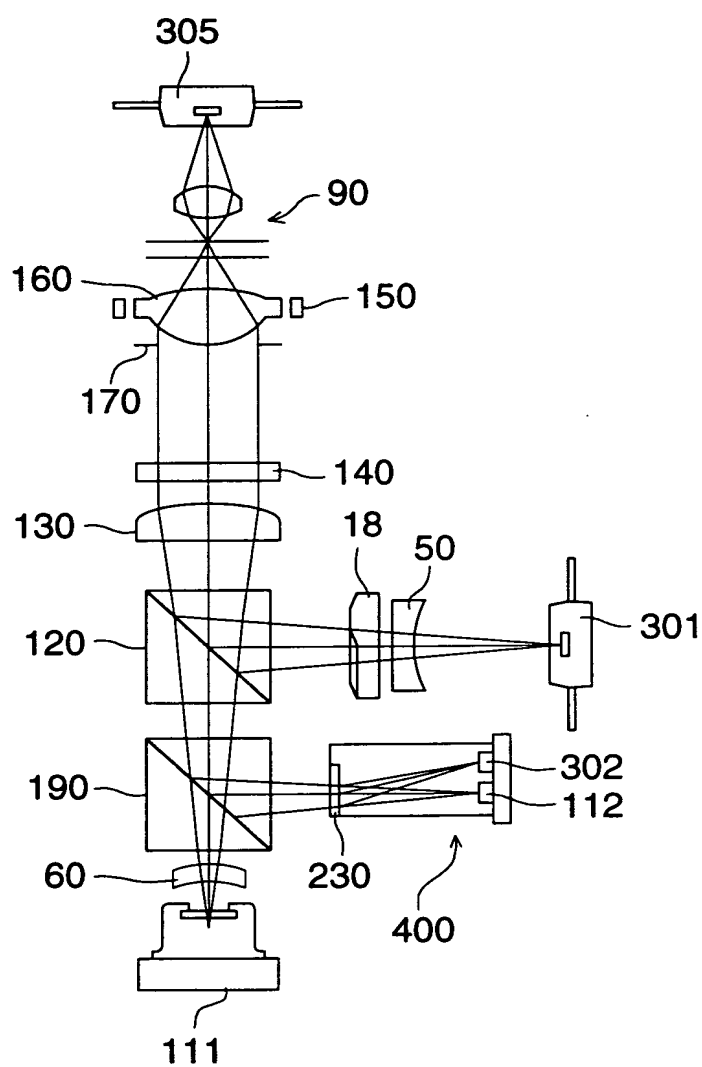


FIG. 109

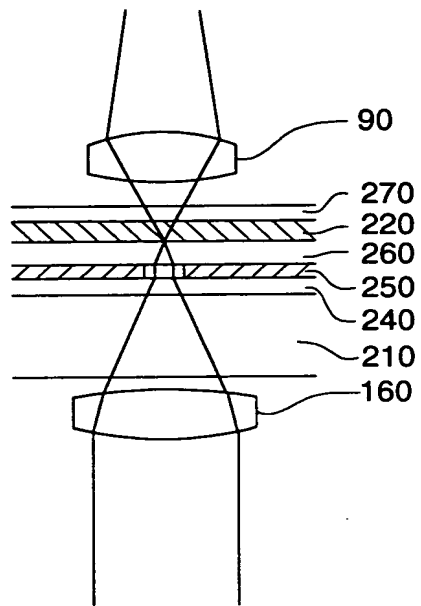


FIG. 110

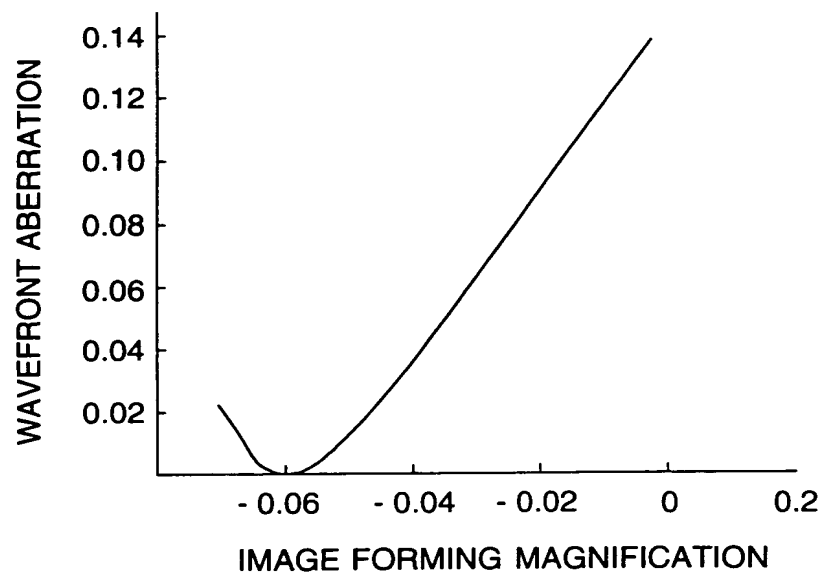


FIG. 111

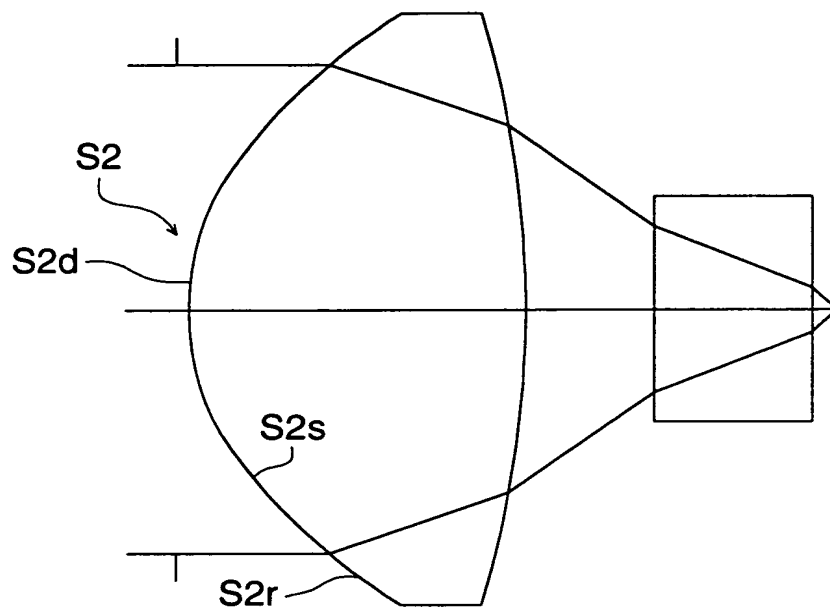


FIG. 112 (a)

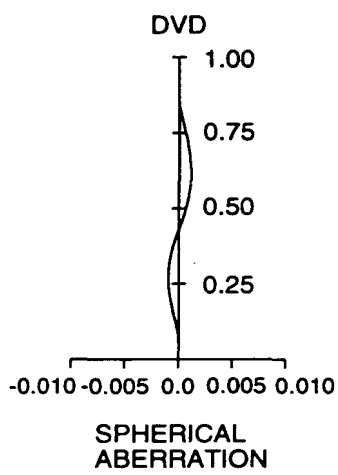


FIG. 112 (b)

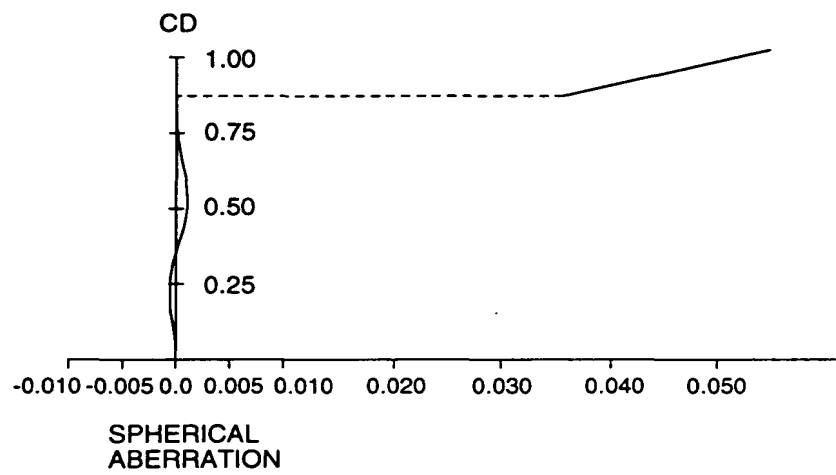


FIG. 113 (a)

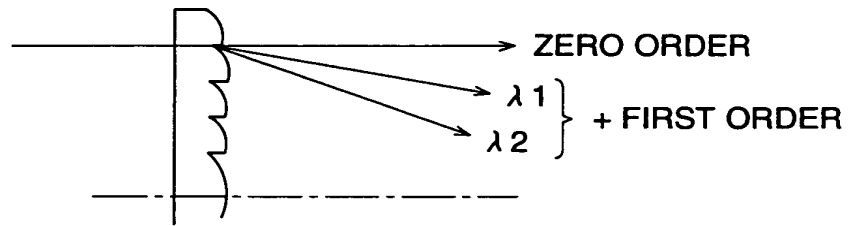


FIG. 113 (b)

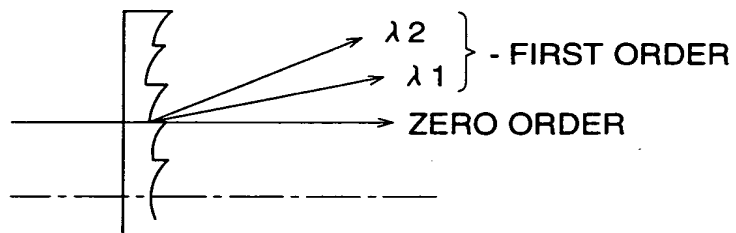


FIG. 114

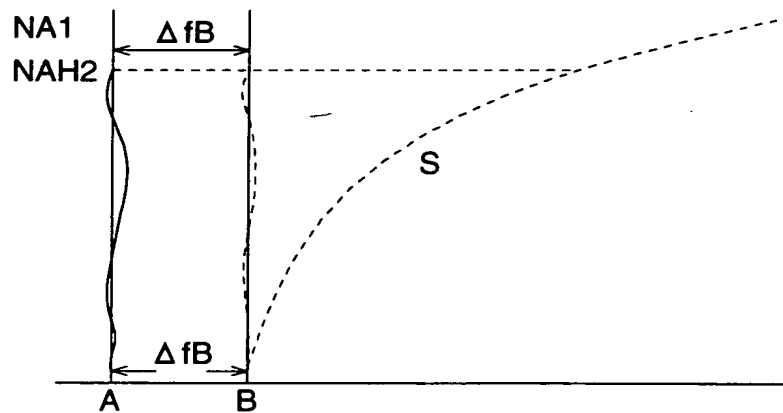


FIG. 115 (a) FIG. 115 (b)

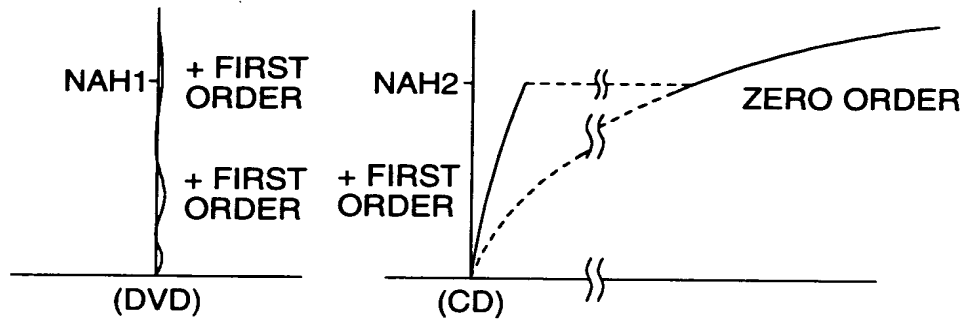


FIG. 116 (a) FIG. 116 (b)

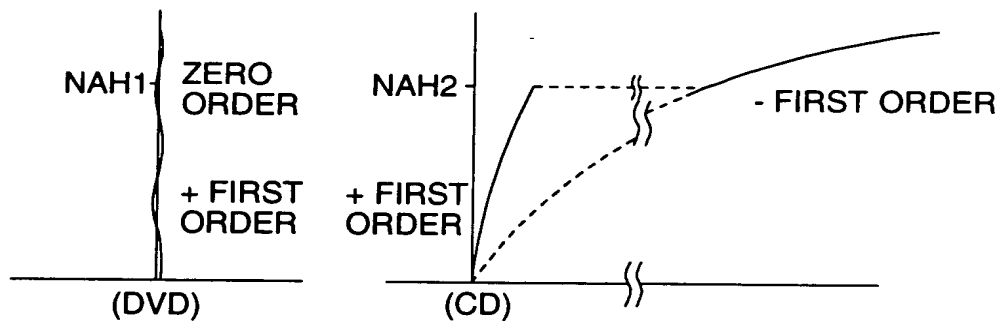


FIG. 117

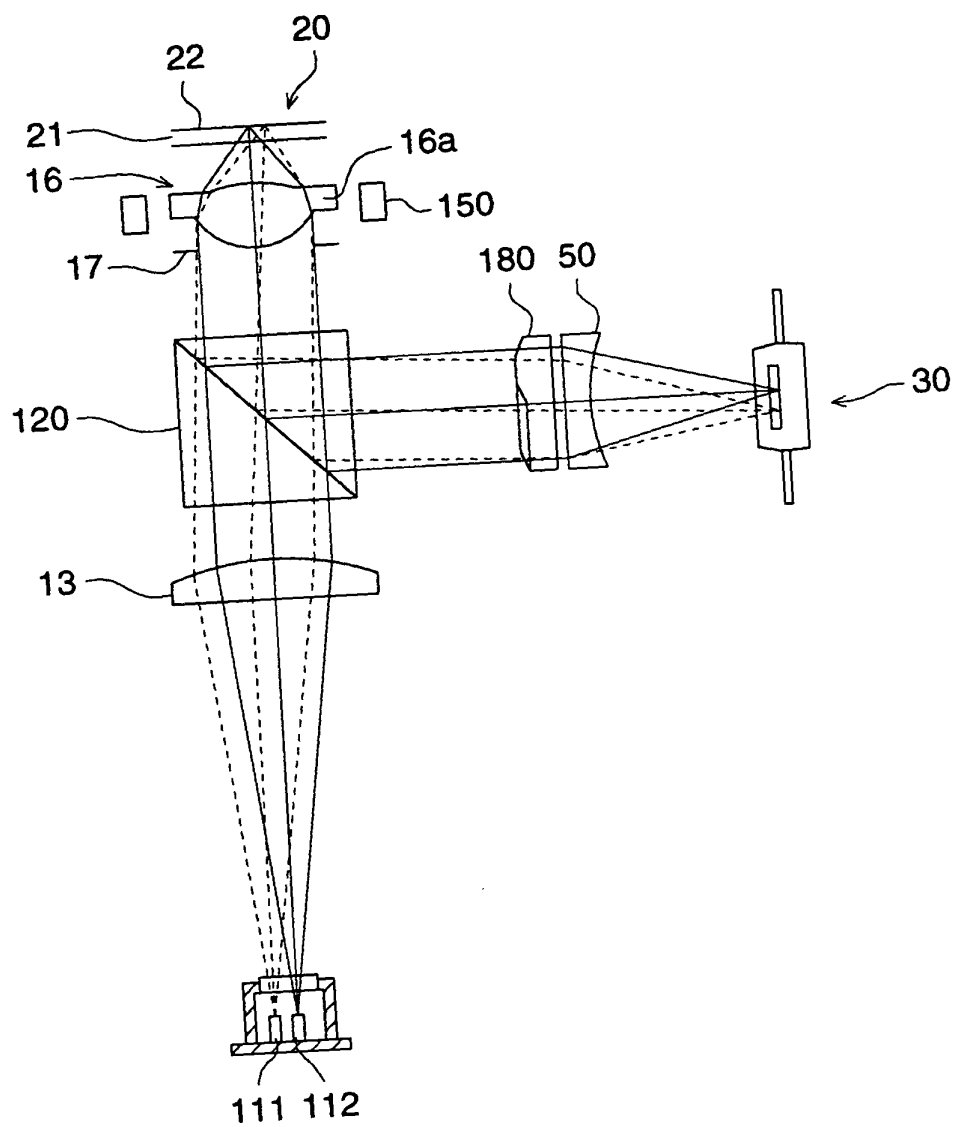


FIG. 118

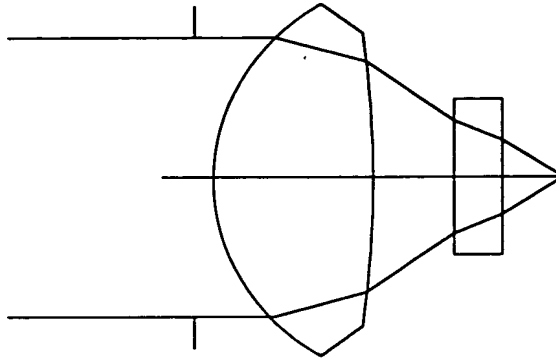


FIG. 119

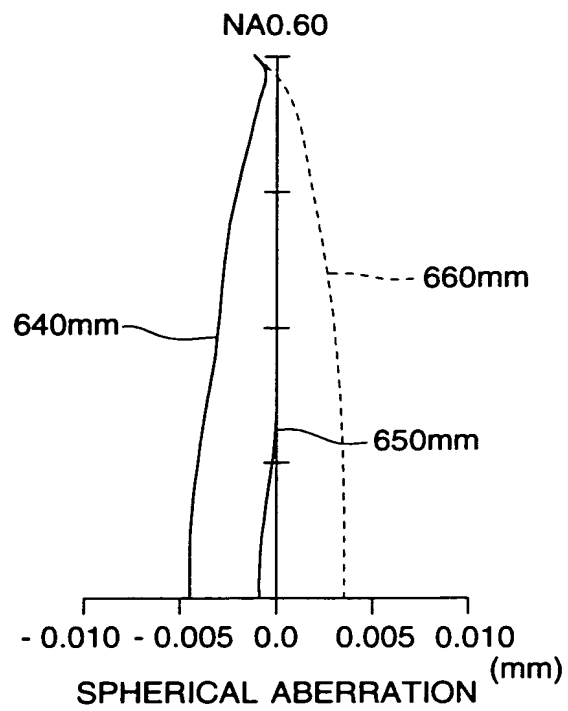


FIG. 120

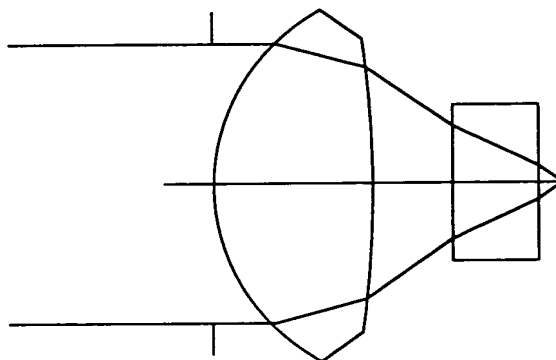


FIG. 121

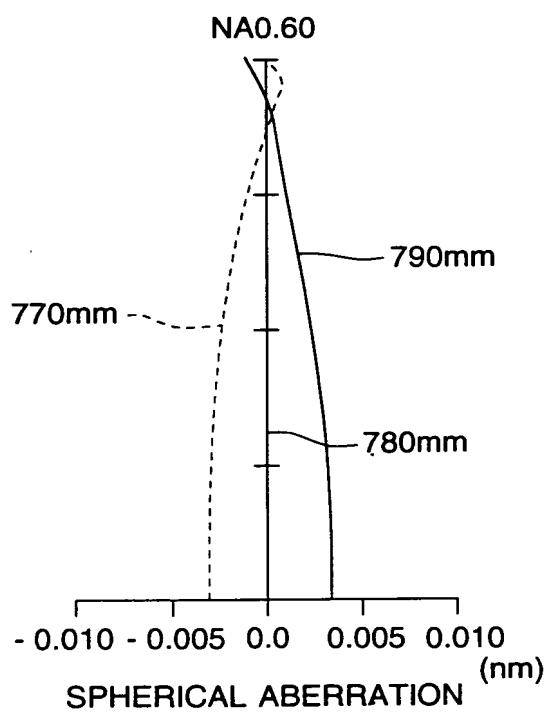


FIG. 122

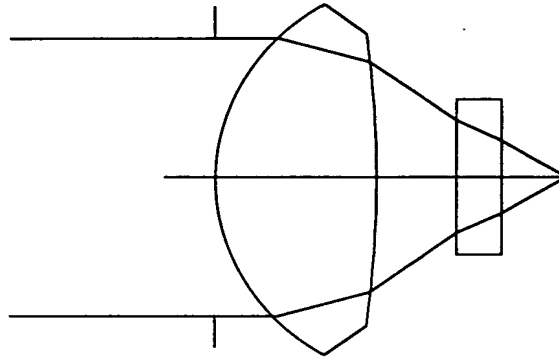


FIG. 123

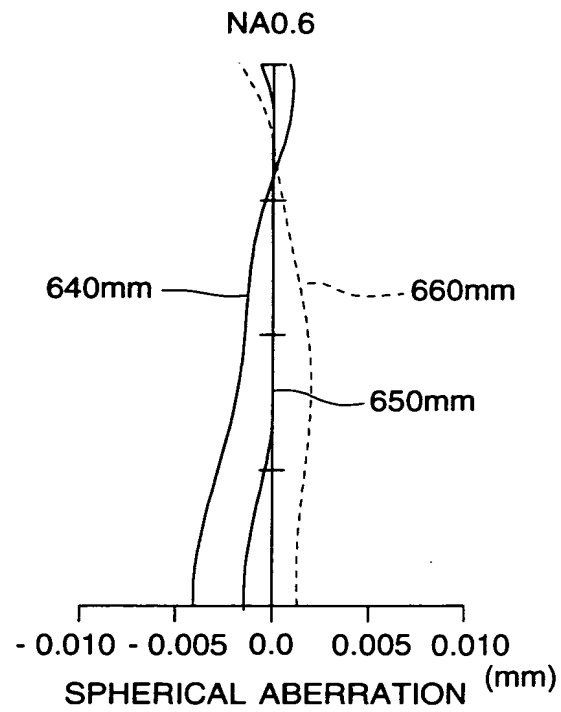


FIG. 124

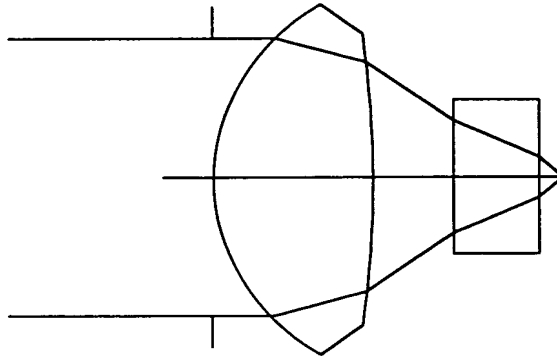


FIG. 125

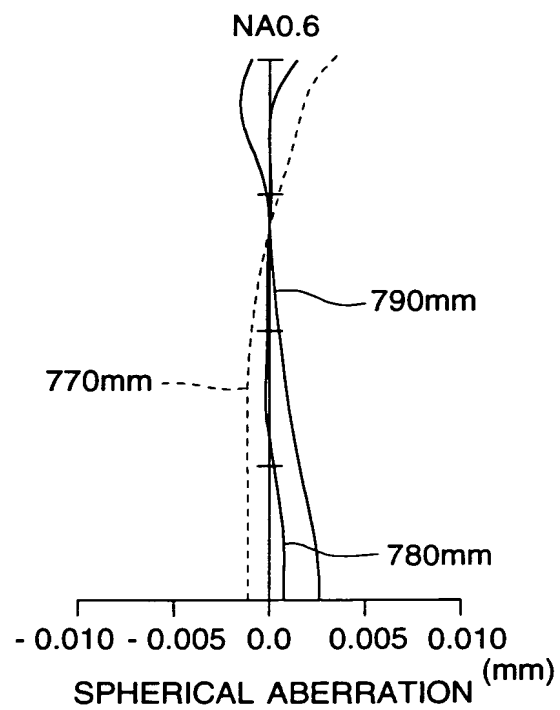


FIG. 126

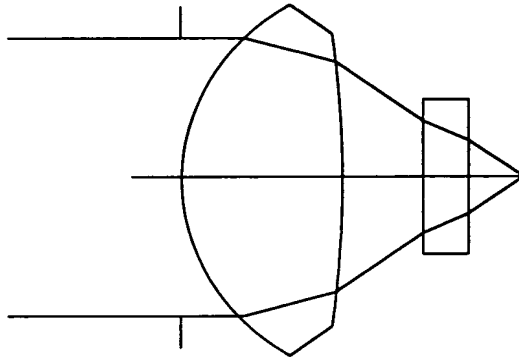


FIG. 127

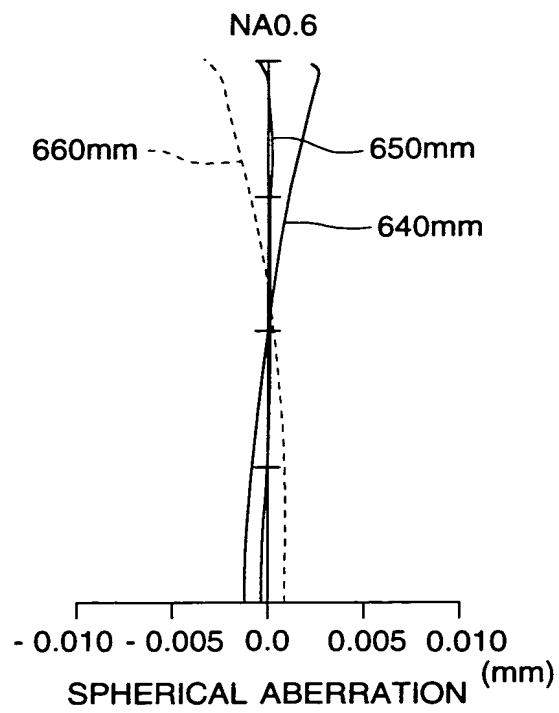


FIG. 128

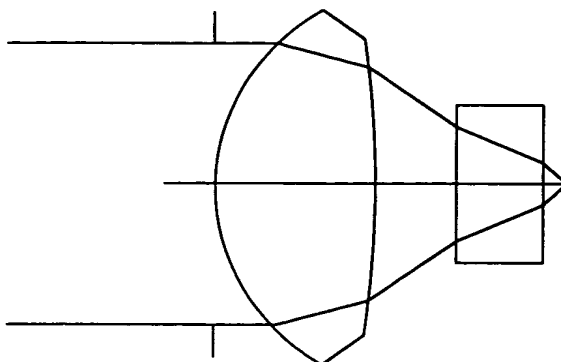


FIG. 129

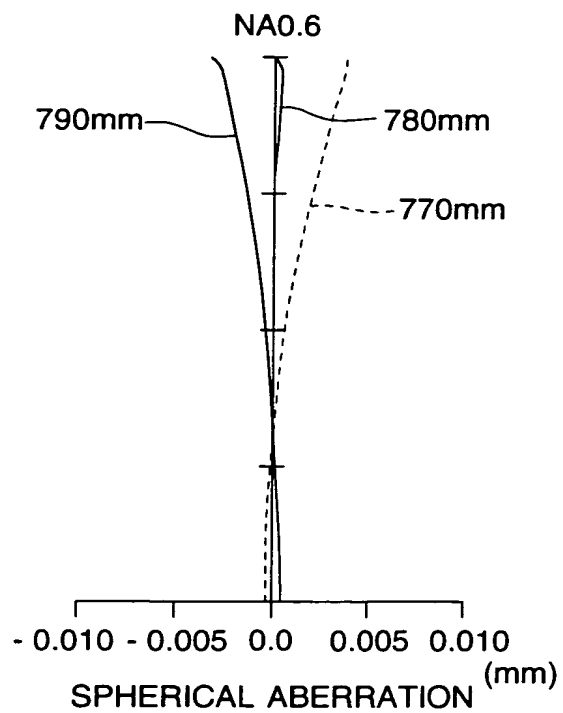


FIG. 130

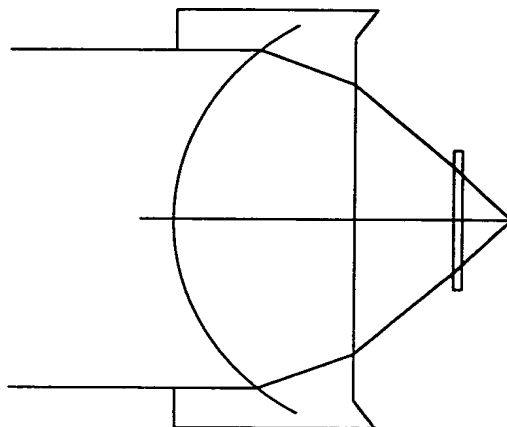


FIG. 131

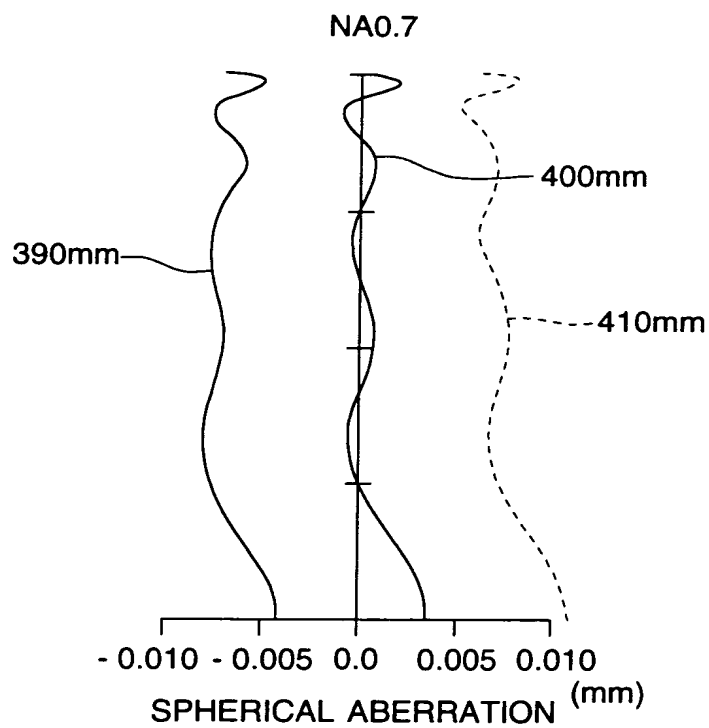


FIG. 132

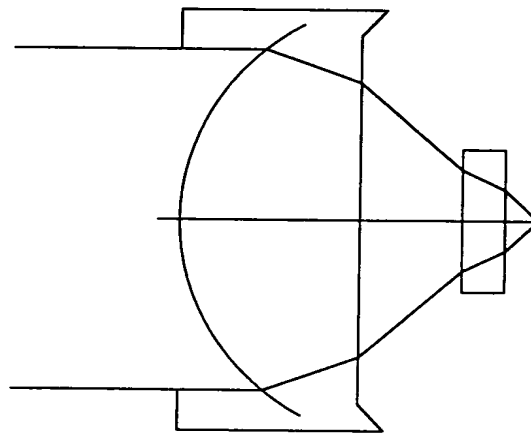


FIG. 133

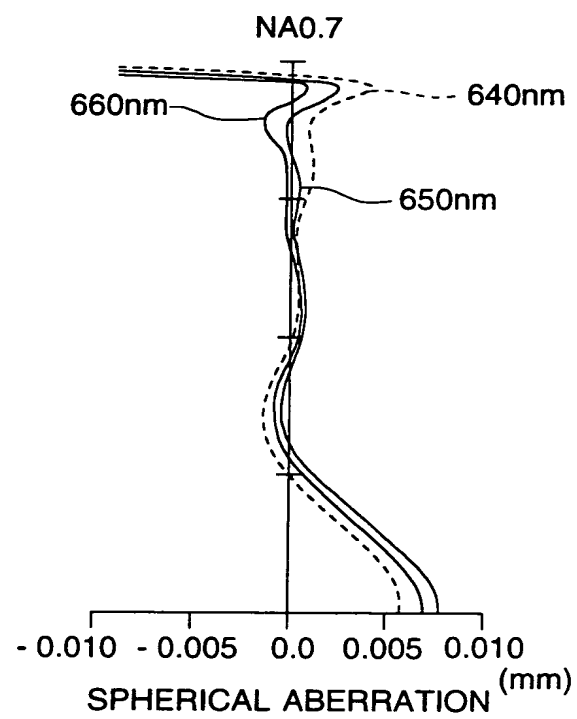


FIG. 134

